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NEW SOURCES OF CRUDE RUBBER.

MANY years ago, when the Beverly Rubber Co. began to collect waste rubber, and in a crude way reclaim it, rubber manufacturers who used only Pará wore the slow, tolerant smile that betokened scorn of such a puerile proceeding. No look into the future gave them a glimpse of the great business in rubber reclaiming that was foreshadowed by the crude operations at the little red mill. Very similar has been the history of the reclaiming of the modicum of caoutchouc that is contained in some of the lesser crude rubber producers. The first guayule experiments were laughed at. Pontianak for a long time was used simply as a filler. The two above mentioned have, in spite of the prejudices of the conservative, come into their own. And that should awaken the most skeptical observer of matters elastic to a suspicion that there might today be others equally available and valuable. As a matter of fact, there are in the tropical jungles more different kinds of gum-producing trees and vines than there are varieties of rubber scrap in any reclaiming mill. They

vary greatly in rubber content, in coagulating facility, in color, smell and value. If it is worth while to collect worn-out hose and reclaim it, why is it not equally worth while to redeem these gums? The story of the new chicle discovered in forests that have long been worked for *Castilloa* emphasizes the fact that new sources are present even in old fields. That the new gum will prove of value to rubber manufacturers, rather than to chewing-gum masticators, is our fervent hope.

SUCCESSFUL INTERNATIONAL RUBBER EXPOSITIONS.

IT has been remarked by a number of close observers that the best way to judge of the future is by the past, and certainly that is a very rational way in which to view prospectively the International Rubber Exhibition, which is to be held in New York in September, 1912.

Probably every rubber man would admit that such an exposition would be exceedingly interesting, highly educational and of a character to attract a great deal of public attention; but as this is the first attempt of its kind in this country a number of people may be inclined to ask the question, "Will it be a success?" The best reply to this question is to ask another: "If England has had two successful rubber expositions, why shouldn't America have one?" We use much more rubber here than they do in England; in fact, we use as much in this country as all the rest of the world beside. There certainly should be as wide an interest here in this industry, which historically is an American industry, as there is across the water, and surely New York is as promising a place for a great exposition as London. It affords one great advantage in the building selected for the exposition as the new Grand Central Palace, some interior views of which will be found on another page, is an improvement in every way over the building in which the London exhibition was held, and is decidedly more convenient of access, being in the heart of the city and within short walking distance of most of the large hotels.

The first International Rubber Exhibition was held in London in September, 1908. There had been, to be sure, a rubber exhibit two years earlier in the Middle East, but that was practically a local affair, while the London enterprise was, as it was called, "international." That proved a great success. The whole English press treated it as a matter of unique

interest to English readers. The daily papers, the scientific journals, and the financial publications all devoted much space to it. The rubber-producing companies in English colonies sent excellent displays, in which they were rivaled by non-English rubber-producing countries. Thirty different countries sent exhibits and eighteen foreign governments were represented. The exposition was so successful that it was repeated, greatly enlarged and vastly improved, three years later, in June and July of the present year.

The exhibits at this second exposition came from every rubber country of the globe. They covered every variety of indigenous and cultivated rubber; they included practically all the utensils and machinery and processes used in preparing rubber for the market. While the larger part of the exhibits concerned rubber growing, there were many interesting manufacturing displays. The exhibition was a marvel of system and good order. To add to its educational value there was a series of lectures and conferences covering every phase of the rubber industry. Rubber men of all branches of the industry attended in great numbers. Planters, manufacturers, chemists, practical men, and theoretical experts came together and exchanged their views. The exposition provided in fact a comprehensive, though naturally somewhat condensed university course on rubber. Financially it was a success also, the space being eagerly sought and the attendance large.

Now, all that has been accomplished in London and more can be accomplished in New York. The New York exposition will be under the same skilful and experienced management, and the early and enthusiastic response from the leading rubber men of Europe and America is decidedly reassuring.

The public at large has become deeply interested in the rubber industry during the last few years, and the daily press in its quest of interesting news has professed to be compelled to devote a good deal of attention to this great and growing industry; and there can be no question of the deep interest that the metropolitan press would take in this exposition. Its very novelty would ensure it an amount of attention that more commonplace and hackneyed subjects could not secure. As for the rubber trade, there may be some who entertain a feeling of opposition to an exposition simply because it disturbs the even tenor of their way; because it is something outside of the accustomed groove. But there are vastly more who will want to avail themselves of the great opportunities the exhibi-

tion will afford not only for increasing their own rubber knowledge and outlook, but for bringing their particular line to the attention of the public. But even among these there are doubtless some who want to feel assured (it is a natural human trait) that the enterprise will be a pronounced success. To all such it may be said that few expositions have ever been held under more favorable conditions or in advance have given more substantial promise of success.

THE PRINCIPLES OF COTTON SPECULATION.

OWING to the similarity of certain conditions affecting rubber and cotton, as well as their close industrial connection, much interest attaches to a recent letter of Herr Arthur Kuffler, President of the Austrian Cotton Manufacturers' Association, to the Vienna daily, the *Neue Freie Presse*. Its broad statements afford a clear basis of further discussion, and illustrate various points bearing on the subject of cotton speculation.

As Herr Kuffler pertinently remarks, the world is confronted by scarcity of raw material, in conjunction with a large and increasing stock of manufactured goods. This situation he attributes to the fact that the world's cotton spindles have, within the last few years, increased in their aggregate number by 19 per cent. The augmented demand thus created for raw cotton has not been accompanied by a corresponding increase of its production, so that, according to the principles of commercial economy, an advance was natural, but, as Mr. Kuffler says:

"The advance of price witnessed of late years was not caused so much by organized speculation on the cotton market . . . as through an increase of productive capacity, not warranted by the demand for finished goods. Such an augmented output not only put up the price of the raw material, but affected the value of the manufactured product by increasing the available supply of same."

Thus the advanced prices have represented the results of the manufacturers' desire to keep their machinery fully occupied, without reference to the situation of consumption. It is to this cause that the present situation is attributed.

Dealing with this year, Herr Kuffler refers to the fact that in the critical month of July, reports of the almost ideal condition of the crop brought about within a few weeks a fall equaling 20 per cent., thus bringing quotations to a point which, although relatively high, was lower than had been reached at any time since September, 1909. This reduction led to an increased business, through the replenishment of the stocks of consumers of

yarns, which had become depleted through long abstention from purchases. For a short time it seemed as if spinners would profit by the fall in cotton prices, to make up for past losses, but in this anticipation they were disappointed. Yarns fell in the same proportion as cottons had done, while there was no diminution in the cost of manufacture.

At the time of Herr Kuffler's letter, the European spinning industry was looking forward to still lower prices for cotton, in the hope of an equilibrium being thus established. The subsequent crop reports would seem to have modified these expectations as to an abundant crop, so that, in Herr Kuffler's words:

"The question, whether after years a sufficient provision of cotton will be available, has not yet been answered in the affirmative. The industry must come to see that its rehabilitation does not lie in fluctuations of the price of cotton, but only in the adjustment of production to demand. As long as full occupation of its machinery is regarded as the principal object, the American cotton planter has nothing to fear with regard to his prices.

"In view of the impossibility of finding an outlet for the entire product on the basis of the recently advanced cotton prices, a continuance of the present losses in the cotton industry must be anticipated."

AMERICAN EXPORTS OF LEATHER AND RUBBER FOOTWEAR.

THE October number of THE INDIA RUBBER WORLD contained an editorial commenting on the fact that during the decade ending with last June the manufacturers of belting, packing and other rubber goods had outstripped the makers of footwear in the development of their export business.

While that is quite true, there is another comparison that places manufacturers of rubber footwear in a distinctly favorable light. The Bureau of Statistics, of the Department of Commerce and Labor, has compiled figures covering the exports of leather boots and shoes for the decade ending with December, 1910, showing that during those ten years the exports of American leather shoes increased from a little over 3,000,000 pairs to a trifle over 7,000,000 pairs, or 133 per cent. During that same time the exports of rubber boots and shoes increased from 767,104 pairs for the year ending June 30, 1900, to 3,791,084 pairs for the year ending June 30, 1910, or an increase of close to 400 per cent.

So here is a comparison not at all disagreeable for the rubber men to contemplate. The government's statis-

ticians estimate that for the present calendar year the exports of leather footwear will equal 8,000,000 pairs. The rubber exports during the same twelve months will undoubtedly pass the 4,000,000 mark. In other words, we will send out this year one pair of rubbers for every two pairs of leather shoes, which, considering the more limited field and less general use of rubbers when compared with leather shoes, proves that the manufacturers of rubber footwear, however they may compare with other rubber makers, are certainly more alert to export possibilities than the leather men.

THE MOST INTERESTING THING IN RUBBER.

IF one were to ask a dozen rubber men to name the most interesting feature of the rubber industry, each would probably name the particular line with which he was personally connected. That is human nature. But if asked what was the next most interesting thing he would doubtlessly reply: "The future rubber supply." Taking the industry in its entirety, the future rubber supply is undoubtedly the most engrossing question. Many minds are speculating on it, and statisticians are continuously busy with figures and comparisons.

In our October issue, in an article entitled "Rubber Progress in the Malay States," we cited the cheering prophecy of Dr. Henry N. Ridley, Director of the Botanic Gardens of Singapore, that in 1916 the rubber production of the Malay peninsula would amount to 130,000,000 pounds. In our November issue, there was a very carefully prepared survey of 193 individual companies in the Malay peninsula, which indicated that by 1915 these companies will have an aggregate output of 81,000,000 pounds. At the rate of increase shown by the figures presented in this article, it would certainly be safe to say that by 1916 the yield would amount to at least 30,000,000 pounds more. Therefore when the English rubber statistician, Mr. Herbert Wright, is quoted as saying that "within five or six years Malaysia and Ceylon together should produce more rubber than the whole of Brazil and Central America yielded last year," he seems to be treading on conservative ground.

Taking the consensus of expert opinion Ceylon and the Malay peninsula may certainly be safely looked to, barring unforeseen disaster, for 60,000 tons of rubber, —which would be equal to three-quarters of the present world's supply—within five years from the present time.

IF THEY COULD ONLY GET IT!

IF the rubber industry could only work up to the giddy heights to which it is carried occasionally by the news-gatherers of the daily press, the outlook would certainly give cause for supreme optimism.

A writer in a Wheeling paper, after beginning a story on rubber footwear in the United States by saying that this line of manufacture is of comparatively recent origin, goes on to remark that the value of the annual production of rubber boots and shoes in this country is \$320,107,458. Perhaps he is right; and perhaps a year's output of American rubber boots and shoes is worth the pleasant sum the reporter names. If so, the manufacturers are the proper object of profound sympathy, for they are willing and even glad to take less than one-quarter of that amount. \$320,107,458 would average more than \$4 a pair for all rubber boots and shoes sold in a year, including children's sandals, that retail for 44 cents a pair, and "Tennis" shoes, that sell for 39 cents. If the makers of rubbers could clean up \$4 a pair for their entire product, they could, in three or four years' time buy out the Standard Oil, and pay off the national debt.

AMERICAN EXPORTS OF RUBBER GOODS.

WHILE all the sections of the United States annual statistical returns (quoted on another page) are of interest, those affecting exports of rubber goods are particularly so. From an average of a little more than six million dollars for the years 1905 to 1908 the following totals are shown for the last three years: 1908-9, \$6,615,074; 1909-10, \$9,060,895; 1910-11, \$10,947,248. The average of the two years 1909-10 and 1910-11 was thus about 50 per cent. above that of the preceding four years, as well as over that shown for 1908-9 alone.

That we have entered upon a period of export activity is further illustrated by the separate returns of trade with the three principal foreign customers of this country:

UNITED STATES EXPORTS OF RUBBER GOODS.

To	1908-09.	1909-10.	1910-11.
United Kingdom.....	\$1,761,730	\$2,798,578	\$3,165,246
Canada	953,897	1,565,904	1,861,861
Germany	534,505	713,707	711,831
Aggregate of three countries	\$3,250,132	\$5,078,189	\$5,738,938

Thus the average rate of increase in the aggregate exports to all countries is more than reflected in the development of trade with the three principal outlets,

which, in their combined form take about one half of the total exports of rubber manufactures.

Various new features are represented in the statistical returns in question, particularly the separate figures of tire exports, the amounts of foreign imports re-exported, and a summary, intended to show at a glance the salient points treated in the preceding detailed tables.

BADNESS NOT BIGNESS THE CRIME.

THE most talked-of contribution to magazine literature in recent years is the article entitled "The Trusts, the People and the Square Deal," which appeared in a recent number of the "Outlook," signed by Theodore Roosevelt.

Political prognosticators saw in this a disposition on Mr. Roosevelt's part to get into the political arena once more. Many of the daily papers called it a bid for the presidential nomination. His enemies said that he had gone over, bag and baggage, to the Wall Street crowd. Mr. Roosevelt himself says that the article had no political significance, and that it is simply a repetition in editorial form of views which he expressed many times in speeches and messages when he was President.

The Colonel's statement is unquestionably correct! There is nothing new whatever in his article. The wide interest it has excited is due, not to its novelty, but to its appearance at this particular psychological moment when the Government's attitude toward trusts is the all-absorbing topic.

Mr. Roosevelt's article, reduced to simple terms, is this: That where the only charge that can be brought against a corporation is its size, it should not be subjected to Government attack, size, in itself, being no crime and not properly a valid reason for prosecution.

His second contention is that where a great corporation has been proved guilty of violation of the law, it should be adequately punished, and should not be allowed to continue in business under the same control, by simply undergoing a rearrangement of its corporate form.

In other words, where corporations like the Standard Oil and Tobacco Company, which he mentions, have been proved guilty of illegal practices, it is not adequate punishment merely to put them to the temporary inconvenience of a certain amount of reorganization. The crime should be fastened upon those responsible for it and they should be punished.

On the other hand, a corporation whose only offense is that it is capitalized at \$100,000,000, or even like the U. S. Steel Trust, at approximately \$1,000,000,000, should not, solely on that account be subjected to attack, but should rather be regarded as a proper object for watchful governmental supervision.

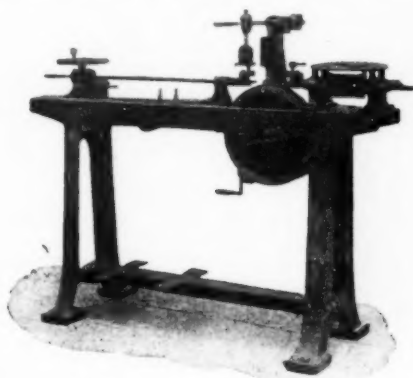
In short, a corporation if guilty should be handsomely punished; if not guilty, should be decently let alone, regardless of size.

Rubber Testing Machines.

IT is worthy of remark that of late years the technique of the rubber industry has ceased to rely solely upon data empirically or accidentally found; being guided by the results of the most methodical tests, often of a scientific character.

With respect to this point, that industry has only participated in the general progressive movement noticeable in other branches

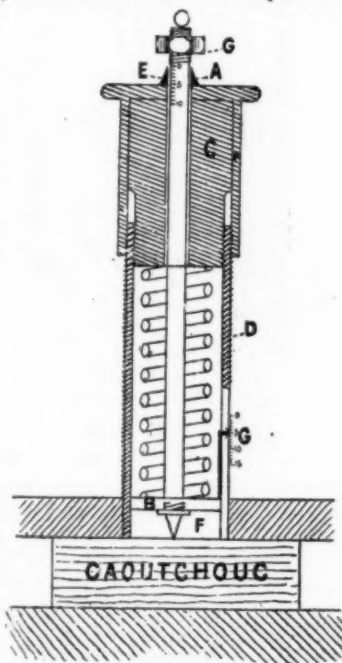
On the other hand, these tests are not sufficiently old to have attained uniformity, through the adoption as standards of the best and most decisive amongst them. Nevertheless, the introduction of their standardization has been proposed by certain testing machine makers, who, with a view to the solution of the problem, have produced testing machines which are intended



THE P. B. DYNAMOMETER.

of manufacture. In both instances the coarse and rudimentary methods of the past have been found insufficient.

It has proved necessary to satisfy a most exacting circle of clients by doing better, and at the same time cheaper work than that of competitors. Hence the task has become a delicate one, and manufacturers have been obliged to adapt themselves to modern conditions by calling to their aid chemists and scientists. It is in consequence of this situation that, amongst other points, mechanical tests of compounds and manufactured products have been developed. Some makers have felt the necessity of verifying their own manufactures by examination and tests, with a view to their improvement. They did so, and their competitors little by little realized they had to follow upon the same lines. In every quarter inventive and creative brains have established mechanical tests, applicable to manufactured products or to those in process at the various plants. Consequently these tests were from the very beginning diverse in character; varying from one laboratory to another, both in the methods and the machinery employed.



ELASTO-DUROMETER.
Pierre Breuil System.



PATENT RUBBER TESTER.
Schopper-Dalén System.

to meet the requirements of the largest possible number of rubber manufacturers. These machines rapidly achieved marked success and continue to render incalculable service to many factory superintendents.

DYNAMOMETER P. B.

The dynamometer on the system of Pierre Breuil has been constructed with a view to meeting all requirements; and claims to be a scientific and industrial apparatus for the testing of all materials. Through the ingenious arrangement of the machine it will allow the most diverse tests to be made and a given test to be carried out under variable conditions. The principal tests relating to the rubber industry are:

Production and measurement of strains.
Tests of tension at various temperatures.

Tests of compression at various temperatures.

Tests of plasticity.

Tests of flexion.

Tests of wear and tear and determination of the coefficient of friction.

Tests of punching fabrics or soft materials.

Tests of cables, cords and metallic wires.

(All the coefficients of importance in the separate tests can be shown by diagrams, which are automatically traced.)

In order to permit at all times the adjustment of the machine, there is a special patented arrangement. The action of the machine is produced by a spring. The inventor has decided to avoid the use of balance levers, which are very bulky and are no more accurate than the special steel spring which he has adopted. He claims that a good quality of spring not subjected to the maximum charge (which totally compresses it) forms a very convenient and accurate testing device.



CUTTING PRESS FOR STANDARD TEST BODIES.

ELASTO-DUROMETER.

The same concern supplies another apparatus on the Pierre Breuil system, called the "Elasto-Durometer," intended (as the name implies) to measure elasticity and toughness. Both these tests are effected by the same machine, through the use of special parts. These machines furnish numerous and detailed results of constant description; being moreover in general use.

SCHOPPER'S RUBBER TESTER.

The firm of Louis Schopper, Leipzig, makes a specialty of the construction of testing machinery for the rubber and allied trades. In contrast with the P. B. machine, Schopper's Patent Rubber Tester is of a dynamometer type, worked by a lever; being one of the most carefully made and most accurate of its kind. With the view of obtaining a maximum of regularity and uniformity, it is operated by water power.

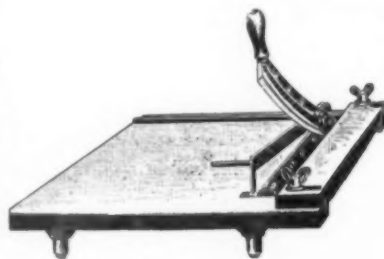
At the same time it is to be noticed that the Patent Rubber Tester is not meant for carrying out the numerous tests which are possible with the P. B. machines. With reference to the preparation of standard test bodies, it has been demonstrated with the Schopper machines that the form of the sample tested exercises considerable influence upon the result of the test; whence the necessity of adopting a standard form. Numerous tests have established the fact that the preferable form is that of a ring.

Together with the Schopper machine there are consequently furnished all the accessories needed for the preparation of test samples; that is to say:

Vulcanizing plates and matrices.

Cutting press (as shown by illustration).

These are the Schopper appliances used by the Royal Testing



APPARATUS FOR CUTTING TEST-STRIPS.

Institute of Gross Lichterfelde for the official tests referred to in the October, 1911, issue of THE INDIA RUBBER WORLD.

CLAYTON, BEADLE & STEVENS SYSTEM.

Like the machines previously referred to, that of Clayton is a dynamometer, giving the resistance, the elongation at the point of rupture, the elongation under a given burden and the hysteresis of gums and compounds—whether vulcanized or not.

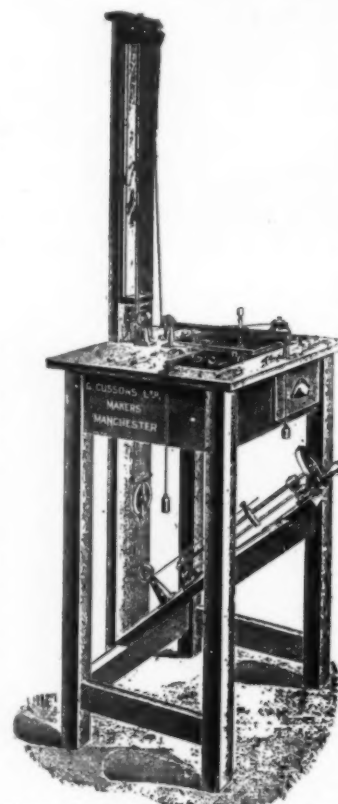
The principal difference in contrast with the Schopper and the P. B. machines, consists in the fact that the Clayton Dynamometer has not a spring like the dynamometer P. B., and has not a lever like the Schopper Rubber Tester.

The Clayton dynamometer has an arrangement similar to that of the Riehle cement testing machine. A stream of water reaches a balanced receptacle at the rate of one kilo (2.2 lbs.) a minute. The weight of the water reaching the point gradually, exercises traction upon the sample being tested. At the moment of rupture,

the stream of water is automatically stopped and the breaking load is found by weighing the amount of water in the receptacle. The stream can, moreover, be stopped at any time, in order to read off the extension under a given load. The quantity of water in the receptacle can also be gradually diminished. As may be understood, this dynamometer is remarkably easy to handle, while it is capable of giving results equally accurate and varied.

THE SCHWARTZ RUBBER TESTING MACHINE.

In the machine of Professor Schwartz, as illustrated, a standard test body is loaded at a given rate (as in the machines previously referred to); but, without reaching the breaking load. Then the load is gradually diminished at the same rate. Both loading and unloading are graphically recorded, and by the curves on the chart is shown the hysteresis of the gum or compound in question.



PROF. A. SCHWARTZ RUBBER TESTING HYSTERESIS MACHINE.

The following physical quantities can thus be determined:—

1. The rate of extension with load. 2. The work done in extension. 3. The work done by the rubber in retracting. 4. The work expended in the rubber itself. 5. The sub-permanent set remaining after a given extension.

OTHER DYNAMOMETERS.

Other dynamometers are those of C. O. Weber and C. L. Delaloe, while in the textile industry there are numerous models varying in strength and accuracy.

One of them is a Schopper dynamometer specially intended for cloth, belting and other materials, and in a general way similar to the Schopper Rubber Tester. In connection with this model, there is used the Schopper apparatus for cutting test-strips, as shown by illustration. These machines, while not having been intended for rubber tests are capable of furnishing excellent results.

The Future of Jelutong.

By PHILIP SCHIDROWITZ.

ONE of the most interesting features of the development of the rubber industry in recent years has been the rapid growth of the production of and the trade in the article known to rubber men as Jelutong or Pontianak. The article is so well known in commerce that it is unnecessary to enter into details regarding its general nature, beyond stating that it is a low-grade gum containing roughly 8 to 15 per cent. of rubber and 25 to 40 per cent. of resin, the balance consisting mainly of moisture. Although small quantities of Jelutong are used outside the rubber trade, the bulk of the material is employed in this trade for one of two purposes, viz.: (1) for the production of rubber therefrom by separating out the resin and moisture; (2) for direct use as a friction or filling material. The trade in Jelutong has grown to such enormous proportions that the question of the continuation of the supply is a matter of serious moment to the various branches of the rubber industry. From the point of view of the production of secondary or industrial rubbers, the question of the supply of crude Jelutong may indeed be regarded as only of secondary importance to the similar problem in the Guayule industry.

Twenty years ago Jelutong was practically unknown, but at the beginning of the present century the trade had already risen to considerable dimensions. In the fiscal year ending June 30, 1901, the United States alone imported roughly 4,600 (short) tons of this material. In 1910 the quantity of Jelutong imported into the United States was roughly $5\frac{1}{2}$ times as great, amounting in round figures to 26,000 tons. This represents an enormous increase over the previous record, the highest figures for preceding years amounting to 14,200 tons in 1907 and 12,400 tons in 1909. The latest figures issued, viz., for 1911, show that there has been no material falling off from the high figures for 1910, the figures for the present year being, in round numbers, 25,700 tons. From the course taken by prices it is obvious that the enormous increase in the imports is not due to any excess of production over consumption, but the reverse, for while the average price in 1901 was 2.6 cents per lb., this steadily rose until during the past year it amounted to 5.6 cents.

Areas of Production.—The Jelutong which comes into the open market is produced almost entirely in Sarawak (Borneo), in Dutch Borneo and in Sumatra. There are also a large number of Jelutong trees in the Malay Peninsula, and a certain quantity of Jelutong is, I believe, being produced there, but so far as I am aware none of this comes to the open market, being derived from concessions granted to a British company which utilizes the material directly for the purpose of producing rubber therefrom.

Sarawak.—Sarawak, which lies to the south of British North Borneo, and is a British protectorate under an independent Rajah, embraces a territory of about 50,000 square miles. The whole of this territory is not, of course, Jelutong bearing, the tree growing mainly in the more or less marshy or swampy areas bordering the main rivers. While it is exceedingly difficult to form any idea of the actual Jelutong areas in Sarawak, the capacity for production of this area may be gauged by the fact that whereas Sarawak exported in the year 1902 3,356 tons, this had risen in 1909 to 9,027 tons. In the period November, 1909, to March, 1910, the exports corresponded roughly to 12,000 tons per annum. While opinions may differ regarding the future production of Sarawak, I personally do not take the view that the destruction of trees which was alleged to have taken place in the past has seriously affected the productive capacity of this territory. Judging by what I saw and from

the information I was able to gather during the course of a visit to Sarawak in 1910, there had been no wholesale destruction of trees, but the natives had in many cases shown an inclination to "ring" or overtap trees, which would ultimately have led to very serious injury. The Government of Sarawak, therefore, in 1910 issued regulations for the protection of Jelutong trees, forbidding, under penalty of a heavy fine or imprisonment, improper methods of tapping, and also strictly prohibiting the felling of trees. I think, therefore, that it is fair to conclude that Sarawak will be able to continue to produce at the present rate, viz., roughly 10,000 tons per annum, and it is probable that if the demand remains as at present fresh areas may be opened up which will lead to an increased production. In this connection it must be remembered that the Jelutong worker can earn an exceedingly good living by Jelutong gathering, even when prices are lower than they were some ten years ago. With spot Singapore prices at four dollars (Straits) per picul, the Jelutong worker can earn probably a dollar to a dollar and a half per day, which is a higher rate of pay than that obtainable by the same type of labor for any similar class of work in those parts of the world. With regard to the opening up of fresh territories in Sarawak, these facts must be borne in mind, and it is just a question of prices whether it will pay the Jelutong collector to open up native paths further into the interior or not.

Dutch Borneo and Sumatra.—According to figures published by Dr. Tromp de Haas, the quantity of Jelutong exported from the Dutch possessions in the East (principal ports Pontianak, Banjarmasin and Palambang) amounted in 1910 to roughly 28,000 tons, of which 20,500 tons were exported to the United States. In the past, particularly, I believe, in the Sultanate of Pontianak, a considerable number of trees were cut down by the natives and bled to death. The natives in that district were accustomed to fell and treat gutta-percha trees in this manner, and they appear to have been under the impression that this was the best method for treating the Jelutong tree. I think that this, and not any inordinate commercial greed on the part of the natives or dealers, accounts for the destruction which took place over certain areas. From all accounts, however, this destruction does not appear to have been widespread except in certain portions of the specific areas indicated. The Netherlands Government have taken steps to safeguard the trees in the future, one of the measures being the granting of large concessions for the exclusive right of collection, one condition being that the concessionaire undertakes to have the trees treated in a rational manner. From official and other information which I have been able to gather, there appears to be little doubt that the producing areas in Dutch Borneo and Sumatra may be considerably increased, and with rational working, I see no reason why—provided the demand is maintained—the Dutch possessions should not produce from 30,000 to 40,000 tons per annum.

Federated Malay States.—While in Borneo and Sumatra Jelutong trees grow mainly in marshy lands adjacent to the rivers, and are frequently somewhat difficult of access, this is not the case in the F. M. S., where, curiously enough, the trees appear to favor the slopes of the higher ground. Notwithstanding this, the quality of the Jelutong obtainable from the F. M. S. growth is substantially the same as that derived from other regions. The development of the Jelutong areas in the F. M. S. has only commenced within recent times, and as far as I am aware, no data are available except those which have been published in connection with the concession granted to the United Malaysian Rubber Co. This concession amounts to something like five million

acres, and while the official "counts" of trees undertaken by the Forest Department show that there is considerable variation according to the district, the general conclusion at which I arrived by a study of the details available (during the course of a visit to the F. M. S. last year) was that on the average one tree to four acres, i. e., 1,250,000 trees in all, could be relied on. It is probable that, taking good and bad varieties together, the area under discussion contains double the number of trees indicated, but for the purpose of forming a reasonable estimate regarding possible production of the F. M. S., it will be safer to take as a basis the number of trees (one and a quarter millions) as mentioned. The Jelutong tree, like the *Hevea*, shows marked wound-response, and as the mature trees are very large, frequently rising well over 100 ft. in height and measuring 4 to 6 ft. and more in diameter, the amount of latex obtainable is very considerable. In a series of tappings made by the Forest Department in the F. M. S. in December, 1909, the first tapping of 48 trees yielded 56 catties of latex (1 cattie=1.33 lbs.), the second tapping of 32 trees produced 66 catties. I came to the conclusion that trees might safely be tapped once a week, but assuming that 40 tappings per annum were made, it follows on the above basis that a mature tree should yield about 80 catties, that is, about 106 lbs. of latex per tree per annum. My conclusions in this respect were confirmed by some figures published in connection with an exhibit at the recent Rubber Exhibition. This exhibit, shown by the United Malaysian Rubber Co., was a section of a Jelutong tree from the Sungei Beradi district, in Sarawak. The height of the tree was 75 ft. It had been tapped fortnightly for six months, giving an average yield of 8 lbs. of latex per tapping, that is equal to 96 lbs. in six months' time. Jelutong latex is very rich in solids, that obtainable in the F. M. S. yielding 60 to 70 per cent. of wet Jelutong, containing roughly 10 per cent. of rubber. That is to say, a mature tree will, if properly handled, yield something like 60 to 70 lbs. commercial Jelutong per annum. Assuming, however, that only 40 lbs. were obtained, and that the number of trees referred to above is accurate, and further assuming that the whole of the areas on which the trees are situated can be readily opened up, it is plain that the F. M. S. should yield something like 25,000 tons of Jelutong per annum. With regard to the probability of this taking place, I can only say that, judging by what I saw on the spot last summer and from the information obtainable, I concluded that there should be less difficulty in collection than in Borneo or in Sumatra.

To sum up the question of supply, we are aware that Sarawak at present is producing at the rate of 10,000 tons per annum, and Dutch Borneo and Sumatra at the rate of 28,000 tons per annum, making 38,000 tons in all. With regard to the future, it is not, of course, possible to speak with certainty, but I think, taking all known facts into consideration, that the following is a reasonable estimate:

Sarawak	10 — 15,000 tons
Dutch East Indies	30 — 40,000 "
Federated Malay States	10 — 25,000 "
Total	50 — 80,000 tons

In dealing with the future of Jelutong, the question of raw material available is not the only point worthy of consideration. The question of quality must not be forgotten, and it is also reasonable to enquire whether in the future it will be more expedient to work up the material while it is fresh in the neighborhood of the areas of production, or to export the material to a temperate climate and there to employ it for the purpose of extracting rubber or, alternatively, as a friction material or filler.

With regard to quality, the same elementary principles apply to Jelutong latex as to all other rubber latices; that is to say, the quality of the material produced depends very largely on the method of coagulation and general handling. The bulk of the

material which comes to the market is still coagulated in the most primitive method with kerosene and various native "powders," comprising gypsum, sulphate of copper, alum, etc. While it is noteworthy that rubber of excellent quality may be produced from certain grades of material coagulated in this manner, I have no hesitation in saying (and I am basing this statement not on mere theory, but on observations of which I have personal knowledge) that an immensely improved product can be obtained by applying a rational method. Rational methods of coagulation not only effect a great improvement in regard to the rubber which can be obtained from the crude material, but also on its keeping properties. If there is one point in connection with the production and the future of Jelutong which I wish to emphasize more than another, it is that those interested in this trade should use every means at their disposal to have the old primitive native methods replaced by adequate and modern processes. In another direction also much improvement is possible. While some grades of Jelutong are reasonably clean and free from mechanical impurities, others contain much dirt, chips of wood and even stones. Seeing that the average Jelutong collector is by no means an un-intelligent person, it should not be beyond the wit of man to devise a system of supervision and collection which should result in the disappearance of these unsatisfactory features. It is only necessary to clearly demonstrate to the native collector that it is to his interest to bring to the market clean and well prepared Jelutong, in order that he should do it. The difficulties associated with a problem such as this are necessarily similar to those attaching to the collection of other wild rubbers, but whereas there are certain things that one cannot expect from the semi-savages in certain parts of Africa and Central and South America, one may reasonably hope to get very different results in the case of the extremely intelligent Malays and certain classes of Dyaks, who constitute the majority of the Jelutong collectors.

With regard to the question as to whether it will be more expedient to work up fresh Jelutong in the tropics or to export it to a temperate climate and there deal with it, there is no question in my mind, so far as the production of rubber is concerned, that a quality can be produced from fresh material which is unattainable in the case of goods which have undergone a lengthy journey. The deterioration which takes place in crude Jelutong during transit is undoubtedly a matter of degree, but it is generally admitted that such deterioration does take place, and that it is frequently of a serious nature. As far as my personal experience goes, I have never seen rubber prepared from Jelutong exported say to Europe or to the United States, which is of the same grade as that which can be produced from fresh material. It must also be remembered that fresh Jelutong contains something like 60 to 70 per cent. of water, and that when exported freight has to be paid on this useless material. While I willingly admit that industrial operations on a large scale in a tropical climate involve certain difficulties and disadvantages, I am of opinion, taking all the circumstances into consideration, that the future of Jelutong, in so far as the production of rubber therefrom is concerned, is most likely to develop on the lines of its rational treatment in the East.

A COMPLIMENT TO THE INDIA RUBBER WORLD.

The "New York Journal of Commerce" has recently quoted quite generously from the pages of THE INDIA RUBBER WORLD on various rubber matters, but particularly in reference to the discussion of the listing of crude rubber on the Produce Exchange.

As the "Journal of Commerce" is exceptionally careful as to the accuracy and authoritativeness of its quotations, to be freely cited in its columns is distinctly a compliment.

THE accepted authority on South American rubber—"The Rubber Country of the Amazon," by Henry C. Pearson.

"Berba Prieto," a New Gutta Rubber.

BY WILLIAM M. MORSE.

SUCH a change has been witnessed during the last five years in the popular estimate of the value of the lesser rubbers and guttas, such as Pontianak, Guayule, etc., that the tropical forester is encouraged to bring still others to the attention of the rubber world. That is why the writer is moved to tell briefly what he knows of Berba Prieto. Unfortunately the photographic plates showing the tree in coming leaf and blossom, and the processes of tapping and coagulating, were destroyed in an accident to the launch as we left the rubber lands. Nor has there been any report from the botanist to whom leaf and flower were sent for identification. So we do not really know what the tree is, but we do know that it produces abundantly a gum that is certainly a high-grade chicle, and that it has a value to the rubber trade even greater than to the chewing gum manufacturer. We have also proved that the tree is very abundant in certain parts of Central America, hundreds of thousands of them having already been located.

The discovery of the tree, or rather of the value of its latex, came about this way: Two years ago, when the *Castilloa* trees in our region had been tapped to their limit and the last drop of latex extracted, the *caucheros* faced a lessened production. They therefore tried other milk producers in order to satisfy the impatient "gringo jefe" by bringing in a full can of milk each day. The cutting of wild rubber in the almost impenetrable forests affords an easy chance for cheating, as the trees are scattered over a large area and often hidden in the valleys and "callejones." After a time it was discovered that the dishonest natives were gathering something besides the regular rubber milk. It showed in this way: When the soft spongy mass of rubber was taken from the coagulating pans and passed through the squeeze rolls, there was a pronounced tendency on the part of the *tortillas* to stick to the rolls. Then in the course of a few days a decided change came over the rubber and it gradually grew black, sticky and eventually assumed the form and appearance of treacle.

A careful investigation conducted by a trustworthy native revealed the fact that some of the tappers were adding to their partly filled cans of *Castilloa* latex the milk of the Berba Prieto. This led to an examination of the tree, which proved to be very plentiful and to be found wherever the *Castilloa* grew. It is a tall, stately tree, with a diameter of two to four feet, and a trunk of forty to fifty feet high before it branches. The bark is comparatively smooth, rather hard and exceedingly brittle. The color in the younger trees is blackish, with irregular, round, whitish areas or spots. The foot of the tree is moderately buttressed.

Knowing that the Berba Prieto was a great producer of "leche" and that its color was identical with that of the *Castilloa* milk, the natives were able to bring in a full can of milk with a minimum of work and little danger of being detected. It was only the tendency to tackiness which betrayed them and opened the way to the discovery of a new and valuable gum.

The difficulties of extracting this gum proved to be many at first. The native *caucheros*, used to working on the ground, could not be induced to climb the trees or work from improvised scaffolds, as they said it made them seasick. They would only tap the trees from the ground. This they did for a time, cutting irregular channels which led the rapidly flowing milk into a tin basin at the foot of the tree. Even with this low tapping it was easy to secure two to three gallons of milk per tree, and it looked as though the *caucheros* could be utilized for a time to good advantage, and later, little by little, taught to climb or work from a ladder.

Another trouble was that the milk did not respond readily to the usual coagulating agents and soured very quickly. It was, however, found that by slowly bringing the fresh milk to the boiling point and keeping it there for a few minutes the gum would coalesce. It was then poured into cooling pans and allowed to stand. In about thirty-six hours the mass would harden from the outside toward the center, and in three to four days it would become hard and brittle all through the mass. The color, however, was black and the general appearance very unsatisfactory. After a few experiments it was found that if copper kettles and copper cooling receptacles were used the gum retained its white color. But when the proper method for coagulating the milk had been discovered another difficulty appeared. It was found that the natives insisted upon following the time-honored method of wiping out the cuts in the tree with their forefingers. As a result, in a short time their hands swelled up, owing to the stickiness of the milk, which stopped up the pores of the skin. This was reason enough to discourage the reluctant workers and they stopped work.

In the meantime, samples of the gum and a five-gallon can of the milk were sent to the States for expert observation and opinion as to the utility of this new product. The first expert reported that the gum failed to look like anything he had seen and was useless; further, that all there was to the milk was a strong, pungent smell. This was discouraging, but another attempt was made, and a sample of gum exactly like the first labeled "Mariato Chicle" was sent to the judgment seat. This was received with the respect due to a newly discovered chicle gum, and a prominent importer agreed to take all there was up to 10 tons at a very good price. Another, a large manufacturer, said it was the finest chicle he had ever seen and wanted to buy the forest that produced it.

Now that Berba Prieto had come into its own and had established itself as a raw product worthy of notice, the question was, how to get it out in quantity?

After various unsuccessful efforts, an experienced chicle gatherer and 10 practical "chicleros" were induced to leave their homes and they were soon on the job. The Chicle Zapote (*Acacia Sapota*), the source of commercial chicle, known as the "Nispero," has a bark of a different texture from that of the Prieto. The former is not so large nor so lofty as the new aspirant to chicle honors, and the "chicleros" found themselves confronted with new problems. Several modifications of the usual appliances were made and a camp was soon in operation.

The Berba *chiclero* is equipped with a pair of climbers with exaggerated spurs to hold in the thick, brittle bark of the Berba. A twelve-foot piece of one-inch rope, a five-gallon kerosene tin and the usual *machete* completes his equipment. He commences to cut a channel in the bark near the foot of the tree, leading the milk downward and into the five-gallon tin. An improvised spigot is made by cutting a leaf transversely and slipping the straight edge into a cut made in the bark, at the terminus of the channel, which conducts the white, running milk safely into the can. The channel is cut upwards in an irregular herring-bone form, until the operator is unable to reach higher—then the rope comes into use. He throws an end of it around the tree and makes a loose loop, knotting it near his body. He holds his *machete* in his teeth, throws the loop as high as possible up the tree, holding on with both hands. He then steps up the tree by means of the climbers, bracing himself in the loop of rope which supports his back. He is thus enabled to have both hands free and continues cutting the channel. In this way he mounts thirty to forty feet, until one side of the

trunk has been tapped. In case there are large branches, these are also tapped and the milk led into the main channel. The average tree produces forty pounds of milk, and the gum content is 60 per cent. A man can tap three to five trees a day, producing 120 pounds of gum per day, which will shrink about 16 per cent. in curing and marketing.

As to position, the camps are located adjacent to the area abounding in Berba—in fact, the established rubber camps are pre-empted for the purpose, as it is a strange coincidence that the *Castilloa* and Berba are found in the same localities. The

milk is first carefully strained and placed in the large copper kettles to boil, very great care being taken to apply the heat gradually, in order to bring the mass by degrees to boiling point. As soon as the entire mass shows agitation, the fire is drawn, leaving enough incandescent coals to continue the boiling for ten minutes longer. The kettle is then lifted from the fire, and the contents poured into large deep copper pans, which hold five gallons each. These are placed where the air can freely circulate around them and in about three days the gum is ready for shipment.

Again Rubber in the Temperate Zone.

TO THE EDITOR OF THE INDIA RUBBER WORLD: I have read your articles on "Rubber Growing in the Temperate Zone" with much interest. You may not know of the planting of Ceara rubber in Germany a few years ago, so I am sending you a description of the venture.

In 1906 Professor Pfadhauer, the well-known German scientist, noted that the rubber tree (*Manihot Glaziovii*) was in no sense of purely tropical growth, and that with suitable preparation of the soil it can be also raised in Europe. About 1904 this expert had planted several two-year-old rubber trees in his garden at Dachau, near Munich, in carefully prepared ground, and by 1906 was in a position to supply the requirements of his household for erasing rubber, garters, etc., from these two small trees.

This success on a limited scale encouraged him to a more extensive trial. According to his views, the climate of upper Bavaria is very suitable for the cultivation of rubber. Hence from being a private enterprise of Professor Pfadhauer, the experiment was subsequently carried out upon a larger scale at Munich itself under the eyes of the Institute of Natural Science. The opinion was at the time voiced by the press that if the anticipated success attended this further trial, wide tracts of land near Dachau would be planted with numberless rubber trees, which would amply cover the needs of Germany for the product.

A company was therefore formed, under the title of the Deutsche Kautschuk-Gesellschaft (German Rubber Co.), with quarters at Berlin, Hamburg, Cologne and Munich. A suitable position and proper soil for the experimental plantation were provided by the above-named Institute near the Botanical Garden, in a location comparatively sheltered from the blasts of winter.

It was found that the Ceara rubber tree (*Manihot Glaziovii*) commences to yield in the fourth year. Consequently it was only necessary in the experimental plantation to secure for the four-year-old trees selected in Brazil, the same conditions as existed where they were growing wild. In the first place the surface to be planted was thoroughly ploughed. The holes in which it was contemplated placing the trees were very deeply excavated, and then half filled with tropical fibrous plants and earth from the Amazon; the nature of the soil being the only point of importance—not the climate.

In execution of this plan three superintendents from the Buen Retiro plantation at Manaus were brought over to Germany. Early in 1906 the rubber trees (which, in consequence of their roots being carefully packed in palm fiber, had suffered no damage) arrived in Munich. They included 45 four-year-old trees and, for a special trial, three trees ten years of age. With the view of avoiding injury to the susceptible roots, the trees were carefully unpacked and wrapped in fiber and Manila mats.

All the holes had been already prepared by being half filled with the tropical plants and earth referred to. The trees were then carefully hoisted in, firmly embedded in the Amazonian earth and surrounded with same to the height of 12 inches.

Particular care had to be taken with the ten-year-old trees to prevent exposure of the naked roots.

Shortly after the planting it could be noticed that the trees warmly embedded in the prepared earth had commenced to blossom.

According to Professor Pfadhauer, the only right course was considered to be the selection for growth in Germany of trees at least four years old. While the transportation and the planting came somewhat more expensive, the risk of growth failing is almost excluded and—above all—a crop can be attained in the first year after planting. According to the results obtained with the experimental plantation, six, eight and ten year old trees would be planted in the Dachau section. The ploughing and preparation of the soil might be considered in that case as liable to be attended with less difficulty; everything being on a large scale and, moreover, such great precautions as would otherwise be necessary, being rendered needless by the sheltered position of that district in question.

Estimates in 1906 made the planting of 600 hectares (1,500 acres) prospectively represent about \$75,000. With an estimated yield in the first year of about 50,000 pounds, an early and liberal dividend was looked for, which might be expected to increase in following years. Even should the price of rubber in Germany be materially reduced, it was anticipated that by the operation before that time of the sinking fund (through which the whole of the plant would have been written off), there would still remain an enormous profit.

BAVARIAN.

* * *

[There are so many contradictions in the communication printed above, and from a practical standpoint the whole venture is so chimerical, that we suspect a joke on the part of our correspondent. Certainly the shipments of Munich grown Ceara rubber are not a feature of today's rubber market. In the photographs sent the earth heaped about the trees looks like Amazonian earth, or African or Icelandic, for that matter. The trees, however, leafless though they be, do not look like Manihots. Is it a joke? Yes?—THE EDITOR.]

\$30,000,000 MORE CRUDE RUBBER IN 1910.

Government statistics show that in 1910 the total value of merchandise imported into this country was \$1,557,000,000, which was \$245,000,000 more than during the preceding year. The value of imports of forest products in 1910 showed an increase of \$55,000,000 over 1909. Of this increase \$39,000,000 was attributed to India rubber.

BERLIN RUBBER FACTORY CHANGES OWNERS.

The offer of Gebrüder Israel for the works of The Gummi-warenfabrik vorm. Voigt and Winde, A. G., of Berlin (in liquidation), equalling \$187,500, has been accepted by the shareholders at a special meeting. This arrangement enables the company to return 74 per cent. on the share capital.

African Grass Rubber.

By F. H. HUNICKE.

UNDER the general term of African Grass Rubber Plants the following are included:

(1) *Landolphia Tholonii*; (2) *Landolphia Humilis*; (3) *Carpodinus Leucantha*; (4) *Carpodinus Chyllorhiza*; (5) *Carpodinus Gracilis*.

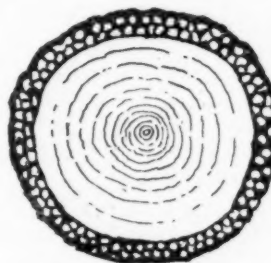
The first two are found in the Congo Basin, i. e., in the French and Belgian Congos, in Nigeria and in the northern part of Portuguese Angola. The other three may be classed as the grass rubber plants of Angola, where they are still found in relative abundance. These also extend somewhat into German Southwest Africa. The general distribution of these five varieties is indicated on the chart on following page.

In addition to the above, various writers include the *Carpodinus Lanceolata* and the *Clitandra Henriquesiana*, designating them as false rubber plants, or, in other words, as plants producing latex which does not contain rubber. Anyone at all conversant with tropical plant life will concede that there are innumerable trees, vines and shrubs which give forth a white milky sap similar to the usual rubber latex, yet these are never referred to as false rubber plants.

The term "grass rubber plants" is distinctly a misnomer, for none of the above varieties could, under the most liberal construction of the word, be included under the general classification of grasses. They are distinctly species of shrubs, as may be readily seen by reference to the photographs of the three varieties found in the Congo Basin. They should be called "root rubbers," as the rubber is invariably extracted from the roots.

The peculiarity or principal characteristic of these plants is that the shrub is of comparatively insignificant size, while the roots, which contain the latex, are of unusual length. It is a very common occurrence to find the shrub of the *Landolphia Tholonii*, which is by far the most important rubber producer,

laced and entangled. In the sandy soil in which the plant is generally found it is a simple matter to pull up the laterals without any tools except a machete to cut such other roots as may have grown across and over the laterals.

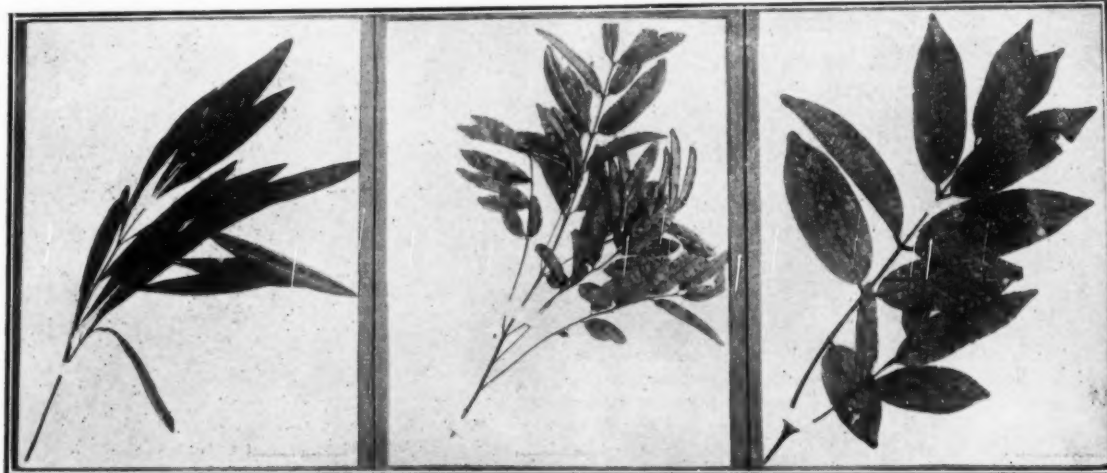


CROSS-SECTION OF THE ROOT OF
LANDOLPHIA THOLONII.

The specimen of *Landolphia Tholonii*, shown in the photograph, measures but eleven inches in height. It represents a fair average sample. The *Carpodinus lanceolata*, or false rubber plant, will commonly reach eighteen to twenty-four inches, while the *Landolphia Humilis* is often found as high as twenty-four to

thirty-six inches. On the other hand, the root systems of the three plants, as regards size, range in inverse order, that is to say, while the *Landolphia Humilis* is a very much larger shrub than the *Landolphia Tholonii*, its underground development is very much smaller.

The roots of the two *Landolphias* are very similar, and they are not easily distinguished from each other except when they are thoroughly dry, when, by breaking them, the greater rubber content of the *Landolphia Tholonii* is at once evident. The unusual feature of the latter root is that the bark consists of innumerable separate pores which extend longitudinally throughout the length of the root. All of these pores contain thick rubber latex. When the root is pulled out of the ground the latex is in the usual liquid form, but this coagulates very quickly when exposed to the



CARPODINUS LANCEOLATA.

LANDOLPHIA THOLONII.

LANDOLPHIA HUMILIS.

but ten to twelve inches in height above the ground, while underground, radiating from a small tap root, there may be several lateral roots which reach a length, at times, of twenty and even thirty feet. These laterals are about one-half inch thick near the tap root and gradually taper down towards the ends. They are seldom more than three inches under the surface of the ground. The lateral roots send up new shoots which, in turn, form new plants, so that the root system in a fairly dense field of *Landolphia Tholonii* becomes considerably inter-

atmosphere. This change takes place so rapidly that it was found impossible to squeeze the latex out of the roots by running it through a small sized crusher, similar to the ordinary clothes wringer, immediately after the root was pulled out of the ground.

On breaking a piece of dry root it will be found that in each individual pore the latex has coagulated into a fine thread of white rubber. Pulling the two pieces of the broken root apart reveals a complete circle of white silk-like rubber threads.

The crude method of extracting the rubber as practised by the

natives is based on this peculiar physical construction of the root. They pull out the roots, cut them into convenient lengths of perhaps six feet, and tie them into bundles, which they carry to the village, where they cut open the bundles in order to spread the roots out on the ground to be dried by the rays of the sun. When thoroughly dry they place the roots in a pool of water and let them soak for several days for the purpose of softening the



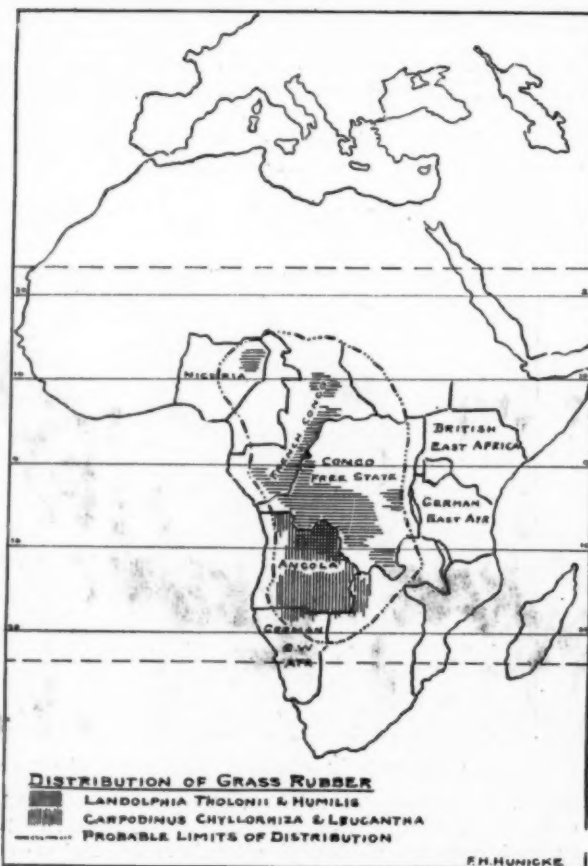
AFRICAN FACTORY FOR EXTRACTING GRASS RUBBER.

bark and loosening it from the woody part. Then they take them to a near-by log or stump of a tree, which serves as an anvil, and by means of a mallet or short club, the bark is separated. The bark is again spread out on the ground to dry. On the thoroughness of this drying depends the future cleanliness of the rubber. Taking a handful of dry bark the native holds it on the anvil, where he again pounds or hammers it with the club or mallet, gradually pulverizing the bark. During this process of pulverization the dust-like bark falls off the anvil, while the particles of rubber unite into a mass. Should the bark be at all damp or wet then the small particles of bark, instead of being blown away by the wind or falling off the anvil, will cling to the rubber, making the separation exceedingly difficult, if not impossible. While this process appears very primitive, it will give excellent results if carried out with care and intelligence. Unfortunately, the average native does not realize how much he would gain by added care. At times the native tries to wash out some of the impurities by working the rubber in water. While this improves the product, it does not overcome the difficulty sufficiently to cause its universal adoption.

It was found on making a few experiments that no plant lends itself so admirably to mechanical treatment as the *Landolphia Tholonii*. In no other rubber bearing plant does the remarkable characteristic of absolutely free, dry and loose rubber occur. Because of this peculiarly favorable condition, almost any machine that will pulverize the bark will liberate or extract the rubber, for, in this particular case, pulverization is extraction. With very slight changes the ordinary pebble mill, a Lane or chocolate mill, an ore stamp mill or any high speed pulverizer will successfully extract the rubber. The simple little contrivance constructed in the field in the crudest way for this special purpose gave remarkable results, for the rubber extracted thereby was very clean and in splendid shape to send to market, as it contained fully 75 per cent. less bark and impurities than similar rubber extracted by the usual native method. The most attractive feature of the little machine, however, is its light weight. In this respect it differs from all other pulverizers, which are universally heavy and cumbersome, and therefore do not lend themselves to being transported through an uncivilized country possessing no transportation facilities.

The *Landolphia Tholonii* is found badly scattered. An acre will seldom produce more than two hundred pounds of roots, from which but ten pounds of rubber can be secured. There are neither pack nor draft animals, nor do wagon roads exist. Everything must be transported on the backs of the natives. And such individual packs seldom pass forty pounds. When, therefore, it is realized that the pebble mill, the unit in the Guayule mill, will consume four thousand pounds of African root bark in one day, that it requires one hundred natives to carry this supply ten miles, that it would require an equal number to start for the factory the next day and fully fifty hands to gather and prepare the roots for the carriers, and that a day's supply would have to be taken from twenty acres, then the importance of a light transportable machine at once becomes evident. Moving a light machine to the field is far easier than carrying the roots to a central factory, for then the weight to be transported is but one-twentieth.

The cultivation on a very large scale of *Landolphia Tholonii* in a thoroughly accessible territory surrounding a central factory, with all modern means of gathering and transporting the roots would not solve the problem, because these roots require so many years before they would be of sufficient size to be of value, even though the yield per acre were most tremendously increased. That such root plantations could never compete with the plantations of *Hevea* in the Far East goes without saying, for both require the same number of years to mature. In the case of the *Hevea* trees, the yield would, after maturity, increase indefinitely



from year to year, while in the case of the *Landolphia Tholonii* the entire yield would be harvested at a sacrifice of all the plants. The wild plants are rapidly disappearing, so that in a few years this source of rubber will become an insignificant factor in the world's production.

"Hevea Brasiliensis" In Mexico.

(By a Special Correspondent.)

REFERENCE has been made on several previous occasions in these columns to the progress effected by the practical introduction into Mexico of the Pará rubber tree (*Hevea Brasiliensis*), and a recent visit to the property of a British corporation known as El Palmar Rubber Estates, Limited—sit-

uating a 70 per cent. stand in germination from imported seed) were about five months old and of an average height of 3 feet. Within the brief space of four months they were observed to have grown to twice this height, a considerable proportion reaching even as much as 9 feet, with a girth, at 1 foot above the ground, of $2\frac{1}{2}$ inches—results comparable with the best obtained in the East. These seedlings have since been successfully transplanted into the field, and an order has been placed for 100,000 more seed, which consignment is now almost daily



NURSERY OF "HEVEA," TEN MONTHS OLD, AT EL PALMAR, WITH PLANTATION OF CASTILLOA IN BACKGROUND.

uated near the station of Tezonapa on the Vera Cruz and Isthmus Railway—afforded the writer an opportunity of studying more closely what had been accomplished there, and of amplifying details already given, in respect to this interesting and important departure. When the original experimental nursery of



NURSERY OF "HEVEA," SEVEN MONTHS OLD, AT EL PALMAR.

Hevea at El Palmar was first seen by your correspondent in March of this year the plants (in number some 7,000, repre-



NURSERY OF "HEVEA," TEN MONTHS OLD, AT EL PALMAR.

expected to arrive, specially prepared ground being in readiness for the same.

Other estates in Mexico upon which tentative trials have been made with *Hevea* are those of La Buena Ventura, on the Isthmus of Tehuantepec; Batavia, in the District of Tuxtepec, State of Oaxaca; and El Chival and Hular Ramirez, in the State of Chiapas. One of these trees on the first-named property, when five years old, measured 20 inches in circumference, at 3 feet above the ground. At Batavia there are about fifty specimens, from seven to ten years old, growing in a clay soil. Some of them have borne seed several times, and, according to the latest reports, all are in a flourishing condition.

It is worthy of mention, notwithstanding the much earlier trials of individual planters and planting companies, as indi-

cated in the foregoing, that the Agricultural Section of the *Departamento de Fomento* of the Mexican Government has lately imported from Ceylon several thousand *Hevea* stumps, having distributed and delivered them, in lots of from 50 to



HEVEA; FIVE YEARS OLD, AT LA BUENA VENTURA.

500, free to all *bona fide* applicants, with the object of promoting tests of this culture under varying physical conditions, reports embodying such data being invited as to the results secured.

With regard to the satisfactory growth of *Hevea* that has been noted in Mexico, so far as experience has gone, it may be contended that such evidence may later prove as delusive as it cannot be denied has been the case, unfortunately, with former anticipations respecting *Castilloa* in Mexico. This possibility is, however, measurably disposed of by the fact that in certain places where *Castilloa* has not done well, perfectly healthy *Hevea* trees, five and six years old, are to be seen today. *Hevea* appears to be far less capricious than *Castilloa*, adapting itself much more readily to a greater variety of soils.

It has frequently been maintained that a prolonged season of rainfall is essential to the well-being of *Hevea*; but it has been found in practice that, given a soil sufficiently deep and granular in character to provide adequate capillarity from the lower water level, the best growth has been attained with a moderate but well distributed rainfall, ranging between 90 and 120 inches per annum. It is held, moreover, by some, that a well-defined dry season is a natural advantage, as tending to check excessive transpiration. Apropos of this point, the writer learned in conversation with Mr. J. C. Harvey, shortly after that gentleman's return from London (where he went to attend the recent International Rubber Exhibition) that the Director of the Agricultural Department of the Indo-French Colonies of Cochin China, in

the course of an instructive lecture on *Hevea* cultivation in those regions, had stated that the total precipitation there was distributed over six months of the year. This would seem to be an exceptional and extreme case, similar conditions certainly not prevailing in any of the rubber planting districts of Mexico, where, as a matter of fact, both rainfall and temperature are generally suitable for *Hevea*.

Hevea exhibits in the early stages of its development a peculiar physiological phenomenon in what is termed periodicity of growth. Instead of any continuous growth, as in *Castilloa*, a series of distinct sectional growths appear to be made during the year; the standard or main stem shooting up with great rapidity from a matured terminal bud to the extent of 1 or 2 feet within a period of a month or six weeks. Growth then temporarily ceases, and the newly produced section more or less ripens during the succeeding quiescent interval of a month or two, when the activity of the plant is renewed in a similar manner. The typical form of the *Hevea* tree, for the first two or three years, is slender and whip-like, swaying with the least movement of the air, this being in marked contrast with the rigid and stocky constitution of *Castilloa*; but during the fourth or fifth year the tree begins to assume a more stable form, when whorls of lateral branches, more or less regularly disposed, are developed and steady trunk expanse ensues.



HEVEA, FIVE YEARS OLD, AT LA BUENA VENTURA.

With reference to the detail of planting distance for *Hevea*, experience seems to have definitely relegated very close planting to the past. Mr. H. A. Wickham, the well-known pioneer of *Hevea* cultivation in Ceylon and Malaya, has gone so far as to advocate planting at such apparently extreme distances as 30 to 40

feet; but the preponderance of authoritative opinion places the distance rather at from 16 x 16 feet to 20 x 20 feet, and certainly the latter (giving, respectively, 120 and 110 trees to the acre) would allow liberal space for root and branch development for a good many years.

As to methods of cultivation, complete clean weeding, as against suitable cover growth between the rubber trees, is still a debatable question, although the late Mr. J. B. Carruthers, of Trinidad, who had devoted much special study to it, was very decided and urgent in his view as to the actual necessity of the latter method for the restoration of humus, the aeration of the soil and the prevention of erosion. Perhaps a *via media*, involving the keeping in subjection of weed growth until the trees commence to shade the ground, and then permitting the natural herbaceous vegetation to come up between the rows of rubber trees, would commend itself to most planters on practical and economical grounds.

There is in Mexico one enemy to *Hevea* that must, from the very first, be seriously reckoned with, namely, the "Tusa," as it is called in this country, a subterranean rodent, commonly known in the United States as the gopher (*Geomys bursarius*). The species found in the tropical sections of Mexico (and known to occur at least as far south as the Isthmus of Panama) is rather larger than the North American species, but appears to be identical in habits. In Chiapas this pest is, or was, a grave menace to young plantings of *Castilloa*, and on one estate with which the writer is familiar, men had to be specially and regularly employed in trapping the vermin. On the Isthmus of Tehuantepec the gopher has not shown any particular liking for *Castilloa*, but has confined its depredations mainly to cacao. These animals, however, did much damage to young *Hevea* trees there, and constant vigilance had to be exercised to prevent them from destroying all such trees. The fondness of the gopher for *Hevea* is probably due to the large percentage of starch contained in the roots of that tree; and it would seem well, in setting out *Hevea* in Mexico, to make a systematic attempt to exterminate this vermin immediately after the burning of the clearing. To this end all colonies of gophers should be located and marked in some easily visible manner, concurrently with the staking of the ground, proper traps being set at the time, as the least delay is dangerous. In case of failure to capture the animals by such means after persistent effort, the only thing left to do is to dig them out of the ground with spades. Bi-sulphide of carbon, introduced into the subterranean passages by soaked pieces of cotton waste, has been used with considerable success; and if the gopher inhales the fumes given off by this chemical, death is sure, but one rarely has the certain evidence that the animal has been killed, while trapping and digging them out leave no doubt on this score. Once thus annihilated, immunity from the pest may be assured for some time, and, when making subsequent cleanings of the planting, its possible entrance from contiguous breeding grounds may be similarly dealt with.

Considering, on the other, hand, the non-existence in Mexico of that deadly vegetable parasite, *Fomes semitostus*, and the hardly less destructive insect pest, *Termes Gestroi*, against the ravages of which planters in the East have ever to be on the alert, we may count ourselves here, in the light at least of present knowledge, relatively fortunate. (The above-named termite is quite distinct from the Mexican species, in that it penetrates into, and works upon, living trees; while the latter—commonly known as the "Comején"—only attacks dead wood.) Following the best scientific advice, which a beneficent government places at their disposal, planters in the East are now going to the vast expense of removing all stumps and roots from lands destined to the planting of *Hevea*, in an organized effort to minimize the propagation of *Fomes semitostus*, which is classed as a contagious disease fungus, spread by underground mycelium.

Without reflecting upon the possible profitability of *Castilloa* cultivation in Mexico where the natural elements are thoroughly favorable, it must be conceded, in view of the higher productive capacity of *Hevea*, as compared with any other rubber yielding tree, that the successful establishment of a planting of *Hevea*, under suitable conditions, cannot but greatly enhance the speculative value of any estate so exploited, and upon which surplus forest or other appropriate virgin areas are yet available; and it would seem that the prospects with regard to this culture in Mexico are sufficiently encouraging to warrant its adoption on cautious lines as a potential means of compensation for the limited realizations of *Castilloa*.

CULTIVATION OF "HEVEA" IN BRAZIL.

ONE of the most interesting chapters of the report issued by the Turin Exposition on the State of Pará (reviewed in another column), is that dealing with the measures which have been taken for the development of *Hevea* culture in that State.

While excellent lands were available, of a character appropriate to the proposed cultivation, it was necessary to obtain the co-operation of the Government, in the form of such concessions as would attract capital. Other points calling for like attention were the scarcity of labor as well as the high cost of transportation.

By the State enactments of November 5 and 6, 1909, guarantees were conceded of interest, premiums and other favors to national and foreign companies, or even to individual agriculturists, having in view the cultivation of *Hevea Brasiliensis* or *Cacao* within the territory of the State.

In consequence of this legislation some grave obstacles were partly removed. Among the steps taken by the State Government was the establishment of experimental fields intended for promoting the cultivation of *Hevea* and cacao, at its agronomical stations of Igarapè, Assu (a short distance from the Braganza railroad) and of Belem; with a view to giving practical instruction to new planters. The results of these official plantations are said to have been worthy of commendation.

At the Orphan Institute of Santo Antonio do Prata there is a plantation of *Heveas* in blossom and of cacao, in a lofty and sandy location. This plantation the Government intends to bring up to 100,000 trees of one or other species.

Subsequently to the promulgation of the laws of November, 1909, and up to December 26, 1910, applications had been received from 42 agriculturists desirous of being inscribed as competitors for premiums, and intending to plant about seven million *Heveas* as well as two million cacao plants. The proportion of the above, representing foreign capital, was about two million *Heveas* and a nearly equal number of cacao plants.

Two companies, desirous of availing themselves of the privileges granted by the enactments referred to, proposed to cultivate a total area of 50,000 acres, granted free on the terms of the statute; each company agreeing to plant 20,000 trees annually. The plantations were to be situated: the first in the Lower Amazon territory, and the second on lands between the River Guamà and the Prata Institute (already referred to).

The co-operation of the National Government has been the subject of a project submitted to the Federal Chamber of Deputies by the representatives of the State of Pará, for promoting the cultivation of *Hevea Brasiliensis* and cereals in Amazonia, their natural habitat.

In conclusion, the report states: "Amazonia is the best region in the world for the extensive and profitable cultivation of *Hevea* and cacao. No other country is in a position to compete with it as to fertility of soil, favorable conditions of climate for this description of culture, potentiality of production, and quality of products. . . . Predominance in rubber production will belong to Amazonia in the same way as that of coffee does to São Paulo."

Official India-Rubber Statistics

For the United States Fiscal Year Ended June 30, 1911.

INDIA RUBBER.

I.—Imports of Crude India-Rubber, by Countries.

From—	Pounds.	Value.
<i>Europe:</i>		
Belgium	4,473,202	\$5,506,054
France	3,169,586	3,720,334
Germany	6,140,045	6,506,868
Netherlands	140,364	123,893
Portugal	1,752,468	1,563,532
United Kingdom	15,953,233	20,788,892
Total	31,628,898	\$38,209,573
<i>North America:</i>		
British Honduras	17,458	\$18,325
Canada	25,154	17,115
Costa Rica	121,346	96,954
Guatemala	129,933	70,795
Honduras	88,748	80,660
Nicaragua	732,842	560,686
Panama	216,846	144,172
Salvador	35,765	19,874
Mexico	853,805	822,651
British West Indies	1,446	998
Total	2,223,344	\$1,832,230
<i>South America:</i>		
Brazil	31,020,764	\$28,521,865
Colombia	933,361	692,188
Ecuador	798,308	638,240
British Guiana	2,574	1,994
Dutch Guiana	852	478
Peru	560,933	579,530
Venezuela	209,101	177,073
Total	33,525,893	\$30,611,368
<i>Asia:</i>		
Chinese Empire	1,800	1,512
British India	718	588
Straits Settlements	2,002,360	1,521,392
Other British Indies	2,598,649	4,006,953
Japan	7,685	8,980
Dutch East Indies	24,476	21,192
Total	4,635,688	\$5,560,617
<i>Africa:</i>		
British South	3,135	2,195
British East	29,302	28,620
Total	32,437	30,815
Grand total	72,046,260	\$76,244,603
Total, 1909-10	101,044,681	\$101,078,825
Total, 1908-09	88,359,895	61,709,723
Total, 1907-08	62,233,160	36,613,185
Total, 1906-07	76,963,838	58,919,981
Total, 1905-06	57,844,345	45,114,450

II.—Imports of Crude India-Rubber, by Customs Districts.

AT—	Pounds.	Value.
Boston	504,963	\$530,812
New York	71,092,415	75,343,972
Philadelphia	318	533
Galveston	595	732
Mobile	2,000	1,971
New Orleans	339,825	275,996
Arizona	4,262	4,148
Paso del Norte	212	223
Los Angeles	579	406
Puget Sound	412	94
San Francisco	75,686	64,587
Champlain	19,350	12,138
Chicago	1,140	1,317
Cuyahoga	800	1,996
Detroit	2,259	4,007
Huron	333	676
Milwaukee	10	25
Niagara	855	834
Cincinnati	22	45
Louisville	184	91
Total	72,046,260	\$76,244,603

III.—Imports of Manufactures of India-Rubber, by Countries.

From—	Value.
Austria-Hungary	\$15,577—

Belgium	36,754—
Bulgaria	1,013+
France	68,322—
Germany	438,302—
Gibraltar	10+
Italy	2,841—
Netherlands	254—
Norway	18—
Russia in Europe	15,170+
Sweden	128+
Switzerland	711+
Turkey in Europe	406+
United Kingdom	288,669—
Canada	5,864+
Mexico	58+
British West Indies	51—
Hong Kong	229+
Japan	526—
Australia	222+
Total	\$875,125

IV.—Imports of Manufactures of India-Rubber, by Customs Districts.

At—	Value.
Baltimore	\$24,863
Bangor	266
Boston	157,324
Fall River	2,923
Georgetown, D. C.	76
Newark, N. J.	1,092
Newport News	3,479
New York	605,219
Philadelphia	15,254
Porto Rico	1,034
Providence	1,418
Galveston	568
New Orleans	7,955
Tampa	2,129
Hawaii	2,988
Los Angeles	1,390
Portland (Oregon)	803
Puget Sound	842
San Francisco	7,774
Buffalo Creek	960
Champlain	247
Chicago	16,828

V.—Exports of Manufactures of India-Rubber (and Gutta-Percha), by Customs Districts.

From—	Belted Packing and Hose.	Boots and Shoes.	Tires For Automobiles.	All Other.	All Other Rubber.	Total Value.
Baltimore	\$4,360				\$568	\$4,928
Bangor	4,379	\$117	\$1,009	\$169	3,769	9,443
Boston	24,430	569,658	5,658	1,779	306,522	908,047
New York	1,309,710	1,520,122	1,459,198	483,898	2,362,120	7,135,048
Passamaquoddy	1,314		370		2,297	3,981
Philadelphia	17,806	1,096	84	7	1,378	20,371
Galveston	291		20		696	1,007
Key West			420		1	421
Mobile	153		388		35	576
New Orleans	1,594	524	1,659	3,916	5,845	23,538
Arizona	57,630	31	3,148	1,928	7,613	70,350
Brasos de Santiago	556		30		731	1,317
Corpus Christi	43,713	312	122,157	21,258	30,503	217,943
Paso de Norte	26,183	29	1,504	704	4,556	32,976
Saluria	36,622		2,610	897	7,880	48,009
Alaska	29,917	15,812	159	208	460	46,556
Los Angeles	433		70		65	568
Puget Sound	23,840	11,508	78,326	28,983	92,840	235,497
San Francisco	350,054	11,296	46,520	11,877	37,806	457,553
Buffalo Creek	32,208		147,625	9,155	188,580	377,568
Cape Vincent			173	275	353	801
Champlain	4,034	724	8,723	9,520	86,215	109,216
Chicago	424				19,149	19,573
San Diego	1,159				2	1,161
Duluth	33,803	3,854	97,435	4,731	69,785	209,608
Memphremagog	554	1,442	57		7	2,060
Minnesota	21,204	60,661	3,085	46	166,879	251,875
Montana and Idaho	7,086	2,598	55,256	58	73,027	138,025
Niagara	3,268	275	664		701	4,908
North and South Dakota	98,081	2,655	19,536	11,214	189,730	321,216
Oswegatchie	9,701	3,905	19,205	558	19,763	53,132
Superior	542	157	739	74	40,438	41,950
Vermont	1,544				1,136	2,904
Other ports	4	11,395	6,990	1,200	154,589	178,423
Total	716				176	892
Total	\$2,163,416	\$2,219,430	\$2,085,107	\$592,470	\$3,886,825	\$10,947,248

Cuyahoga	469
Detroit	259
Genesee	1,835
Huron	214
Miami	259
Milwaukee	672
Minnesota	3,652
Niagara	266
Vermont	378
Cincinnati	5,190
Denver	213
Grand Rapids	121
Indianapolis	81
Kansas City	3
Pittsburgh	1,776
St. Louis	2,788
Syracuse	46
Other ports	1,471
Total	\$875,125

VI.—Guayule Gum.

From—	Pounds.	Value.
Mexico	19,749,522	\$10,443,157

Previous to 1910 Guayule was not classified separately from other India rubber.

GUTTA PERCHA.

I.—Imports of Crude Gutta-Percha by Countries:

From—	Pounds.	Value.
France	1,135	\$1,496
Germany	191,731	120,242
United Kingdom, England	16,537	6,036
United Kingdom, Scotland	9,051	22,595
Panama	26,577	13,792
Mexico	825	412
Straits Settlements	1,402,935	225,930
Philippine Islands	130	45
Total	1,648,921	\$390,548
Total, 1909-10	784,501	\$167,873
Total, 1908-09	255,559	82,136
Total, 1907-08	188,610	100,305
Total, 1906-07	546,890	201,339
Total, 1905-06	500,770	188,161
Total, 1904-05	665,217	210,188

GUTTA-JELUTONG (PONTIANAK.)

FROM—	Pounds.	Value.
France	114,281	\$6,857
United Kingdom	7,458	285
Straits Settlements	51,284,467	2,854,673
Dutch East Indies	14,666	818
Total	51,420,812	\$2,872,633
Total, 1909-10	52,392,444	\$2,419,223
Total, 1908-09	24,826,296	852,372
Total, 1907-08	22,803,303	1,039,776
Total, 1906-07	28,437,660	1,085,098
Total, 1905-06	21,390,116	733,074
Total, 1904-05	19,104,911	641,319

BALATA.

FROM—	Pounds.	Value.
Netherlands	41,182	\$42,273
United Kingdom	146,781	125,347
Panama	21,555	8,419
Salvador	420	162
British West Indies	40,877	27,867
French West Indies	2,820	2,397
British Guiana	92,991	75,012
Dutch Guiana	281,903	199,079
French Guiana	26,151	19,216
Venezuela	215,625	124,930
Total	878,305	\$624,702
Total, 1909-10	399,003	\$196,878
Total, 1908-09	1,157,018	522,872
Total, 1907-08	584,582	276,756
Total, 1906-07	799,029	305,041
Total, 1905-06	374,220	152,689

II.—Value of Imports of Manufacture of Gutta Percha by Countries:

FROM—	Value.
Belgium	\$1,019
France	3,343
Germany	44,664
United Kingdom	11,763
Canada	494
Total	\$61,283

SCRAP RUBBER.

I.—Quantity and Value of Imports, by Countries.

FROM—	Pounds.	Value.
Austria-Hungary	105,934	\$4,213
Belgium	768,868	65,246
Bulgaria	16,620	1,532
Denmark	216,753	18,239
Finland	237,600	24,962
France	3,692,876	331,631
Germany	2,773,209	230,846
Italy	19,348	1,856
Netherlands	451,968	35,614
Norway	339,372	31,591
Roumania	22,000	1,840
Russia in Europe	7,119,625	638,367
Spain	14,329	893
Sweden	1,171,528	113,391
Switzerland	114,382	11,196
Turkey in Europe	614,137	55,900
United Kingdom	5,227,764	471,064
Canada	3,117,882	231,299
Panama	95,766	3,734
Mexico	208,971	15,852
Newfoundl'd & Labrador	13,077	1,206
British West Indies	1,830	163
Cuba	157,780	13,129
Brazil	2,145	639
Chile	4,409	299
British Guiana	429	6
Chinese Empire	161,906	9,128
Hongkong	100,640	5,860
Asiatic Russia	156,996	13,877
Turkey in Asia	10,799	772
Australia and Tasmania	7,258	426
New Zealand	1,799	99
Total, 1910-11	26,948,000	\$2,334,870
Total, 1909-10	37,364,671	\$2,998,697
Total, 1908-09	20,497,695	1,543,267
Total, 1907-08	16,331,035	1,496,822
Total, 1906-07	29,335,193	2,608,967
Total, 1905-06	24,756,486	1,721,678
Total, 1904-05	15,575,214	953,439

II.—Quantity and Value of Exports, by Countries.

TO—	Pounds.	Value.
Austria-Hungary	198,301	\$13,740
Belgium	534,266	39,472
France	1,000,113	105,172
Germany	1,361,620	135,002
Italy	45,297	5,155
Netherlands	469,530	68,499
Norway	20,654	2,070
United Kingdom (Engl'd)	2,099,263	202,398
United Kingdom (Scot'l'd)	52,686	10,237
Canada	1,357,999	141,919
Total, 1910-11	7,049,729	\$723,664
Total, 1909-10	6,143,610	\$578,944
Total, 1908-09	4,071,795	402,897
Total, 1907-08	4,255,789	449,727
Total, 1906-07	4,756,621	548,695
Total, 1905-06	a	339,507
Total, 1904-05	a	204,945

a—Not officially reported.

III.—Quantity and Value of Exports, by Customs Districts.

FROM—	Pounds.	Value.
Arostook	3,176	\$136
Baltimore	620,641	29,109
Bangor	1,657	74
Boston	417,539	16,191
New York	4,411,297	522,068
Philadelphia	240,628	14,280
New Orleans	1,625	97
Buffalo Creek	129,996	10,925
Champlain	137,304	14,797
Chicago	30,194	3,170
Detroit	93,645	9,012
Huron	387,942	35,463
Memphremagog	106,856	16,594
Niagara	328,805	32,067
Oswegatchie	11,500	575
Vermont	126,924	19,106
Total, 1910-11	7,049,729	\$723,664

EXPORTS OF AMERICAN RUBBER GOODS, FISCAL YEAR ENDED JUNE 30, 1911.

EXPORTED TO—	Belting, Packing and Hose.	Boots and Shoes.		Tires		Other Goods.	Total Value.
		Pairs.	Value.	For Auto-mobiles.	All Other.		
EUROPE:							
Austria-Hungary	\$8,676	30,845	\$19,376	\$329	.....	\$9,658	\$38,039
Azores and Madeira	29	59	197	.....	.....	337	563
Belgium	5,789	112,140	56,808	821	\$302	58,853	122,573
Denmark	11,180	45,988	29,991	98	1,658	10,039	52,966
Finland	91	437	404	.....	30	677	1,202
France	3,319	159,850	75,885	185,473	8,535	118,775	391,987
Germany	40,204	525,810	291,967	29,979	1,398	348,283	711,831
Gibraltar .....	.....	234	1,045	.....	.....	252	1,403
Greece .....	.....	2,000	74,856	.....	.....	358	74,856
Italy	2,181	124,347	4,136	537	17,832	43,792	139,198
Netherlands	7,114	8,442	4,136	.....	255	36,735	48,240
Norway	2,156	59,818	33,850	1,295	.....	3,280	40,581
Portugal .....	.....	11,389	9,529	693	.....	1,119	11,341
Roumania .....	.....	627	1,512	.....	.....	.....	1,512
Russia in Europe	20	7,069	7,613	655	764	6,052	15,104
Spain	752	42,126	25,566	3,547	96	3,299	33,260
Sweden	1,579	14,606	11,455	8,335	5,688	8,440	35,497
Switzerland	774	121,804	67,229	.....	.....	4,930	72,933
Turkey in Europe	1,064	620,822	302,537	.....	.....	100	303,701
United Kingdom—							
England	182,684	1,104,370	573,072	1,104,416	127,478	1,098,325	3,085,975
Scotland	4,155	140,116	57,013	.....	.....	15,725	76,893
Ireland .....	.....	2,645	1,336	.....	.....	1,042	2,378
Total, Europe	\$271,767	3,135,544	\$1,645,629	\$1,336,178	\$164,036	\$1,769,819	\$5,187,429
NORTH AMERICA:							
Bermuda	\$863	408	\$281	.....	\$2,954	\$1,406	\$5,504
British Honduras	1,459	12	24	\$15	120	481	2,099
Canada	280,004	183,430	114,058	405,778	44,245	1,017,776	1,861,861
Costa Rica	8,508	112	76	951	1,117	7,008	17,660
Guatemala	9,843	224	307	1,343	600	5,365	15,358
Honduras	6,199	7	44	.....	281	1,412	7,936
Nicaragua	6,291	17	50	.....	64	9,164	15,569
Panama	100,202	6,513	16,865	5,379	11,761	52,102	186,309
Salvador	7,661	4	22	525	650	16,779	25,637
Mexico	409,913	2,227	2,160	144,893	48,065	128,226	733,257
Miquelon, Langley and St. Pierre Islands	30	2,715	2,099	.....	.....	166	2,295
Newfoundland and Labrador	14,968	65,685	45,041	955	1,042	5,732	67,738
West Indies—							
British	9,315	1,061	632	14,007	8,130	14,875	46,959
Cuba	153,374	5,015	5,493	27,072	112,783	131,596	430,318
Danish	451	445	393	.....	.....	677	1,521
Dutch	313	62	38	30	74	607	1,062
French .....	.....	94	4	.....	401	104	509
Haiti	1,576	170	204	321	3,854	7,175	22,163
Santo Domingo	10,609	.....	.....	.....	.....	.....	.....
Total, North America	\$1,021,579	268,202	\$187,848	\$601,269	\$236,141	\$1,402,040	\$3,448,877
SOUTH AMERICA:							
Argentina	\$28,831	26,131	\$18,047	\$3,541	\$6,517	\$80,524	\$137,460
Bolivia	1,344	72	55	.....	.....	654	2,053
Brazil	34,442	45,201	35,548	10,112	7,767	62,596	150,465
Chile	34,574	7,125	5,441	262	21,786	10,047	72,110
Colombia	9,398	3,267	1,976	2,564	2,737	6,342	23,017
Ecuador	7,042	1,595	1,655	392	260	3,888	13,237
Guiana—British	701	3,490	1,811	624	1,449	1,395	5,980
Dutch	4	.....	.....	.....	20	895	919
Paraguay .....	.....	.....	.....	.....	.....	51	51
Peru	26,603	1,068	941	557	.....	8,021	36,122
Uruguay	117	26,304	16,180	586	2,938	22,868	42,689
Venezuela	5,659	241	138	130	558	12,327	18,812
Total, South America	\$148,715	114,494	\$81,792	\$18,768	\$44,032	\$209,608	\$502,915

RECLAIMED RUBBER.

I.—Quantity and Value of Exports, by Countries.

To—	Pounds.	Value.
Belgium	245,014	\$48,830
France	494,255	\$96,413
Germany	251,690	\$38,507
Italy	14,645	2,592
Netherlands	2,279	228
Norway	5,057	900
Sweden	13,595	2,550
United Kingdom (Engl'd)	1,001,376	149,046
United Kingdom (Sc'tl'd)	67,681	11,290
Canada	2,600,019	421,713
Japan	286,064	47,227
Australia and Tasmania	12,852	2,354
Total, 1910-11	4,994,527	\$781,650
Total, 1909-10	3,622,556	\$535,795
Total, 1908-09	3,196,551	414,861
Total, 1907-08	2,947,974	418,738
Total, 1906-07	4,530,788	665,109
Total, 1905-06	4,084,696	511,843
Total, 1904-05	a	522,902

a—Not Officially reported.

II.—Quantity and Value of Exports, by Customs Districts.

From—	Pounds.	Value.
Baltimore	1,671	\$165
Boston	272,237	44,936
New York	1,028,497	125,538
Philadelphia	982,273	169,036
Puget Sound	11,017	2,200
San Francisco	97,513	17,802
Buffalo Creek	740,996	117,977
Champaign	973,440	148,713
Detroit	4,000	687
Huron	53,951	9,824
Memphremagog	457,738	91,603
Niagara	280,249	41,207
Vermont	90,945	11,962
Total, 1910-11	4,994,527	\$781,650

RE-EXPORTS OF IMPORTED INDIA-RUBBER.

By countries (for year ending June 10, 1910):

	Pounds.	Value.
Austria-Hungary	200	\$250
Belgium	184,984	199,816

EXPORTED TO—

	Belting, Packing and Hose.	Boots and Shoes.		Tires		Other Goods.	Total Value.
		Pairs.	Value.	For Auto-mobiles.	All Other.		
ASIA:							
French China	\$905						\$905
Chinese Empire	12,372	318	\$620	\$590	\$38	\$4,888	18,508
Japanese China	2,612	24	28				2,640
British India	13,732	336	198	874	479	12,075	27,358
Straits Settlements	733			283	115	1,187	2,118
Other British	30			160		61	251
Dutch East Indies	114			916	1,020	1,805	3,855
Hong Kong	4,610	82	220	997	460	673	6,960
Japan	127,147	56,090	39,351	15,319	12,730	173,354	367,901
Korea	5,484	48	24			359	5,867
Asiatic Russia	6,371	180	421			976	7,768
Siam	528			207	160	1,092	1,987
Turkey in Asia		49,041	28,127			728	28,855
Total, Asia	\$174,638	106,119	\$68,989	\$19,346	\$15,002	\$197,198	\$475,173
OCEANIA:							
Australia and Tasmania	\$112,890	291,678	\$161,882	\$3,292	\$4,108	\$136,032	\$418,204
New Zealand	47,619	39,045	39,813	7,078	10,882	65,769	171,161
Other British	137	2,242	946			95	1,178
French Oceania	1,550	5,860	4,707	36	55	1,135	7,483
German Oceania	58	96	85				143
Philippine Islands	106,206	6,403	6,487	90,759	106,821	87,079	397,352
Total, Oceania	\$268,460	345,324	\$213,920	\$101,165	\$121,866	\$290,110	\$995,521
AFRICA:							
British, West	\$16	60	\$43			\$27	\$86
British, South	176,628	13,937	20,876	\$8,310	\$11,230	13,331	230,375
British, East	193						193
French Africa						516	516
Liberia						14	14
Portuguese Africa	100,163			71		3,838	104,072
Turkey in Africa—Egypt	1,257	652	333		163	324	2,077
Total, Africa	\$278,257	14,649	\$21,252	\$8,381	\$11,393	\$18,050	\$337,333
Grand Total, 1910-11	\$2,163,416	3,984,332	\$2,219,430	\$2,085,107	\$592,470	\$3,886,825	\$10,947,248
Grand Total, 1909-10	\$1,960,825	3,791,084	\$1,984,739		\$5,115,331	\$9,060,895	\$10,947,248
Grand Total, 1908-09	1,498,445	2,396,435	1,292,673		3,823,956	6,615,074	
Grand Total, 1907-08	1,347,775	3,080,253	1,614,290		3,743,040	6,705,105	
Grand Total, 1906-07	1,253,369	2,310,420	1,231,898		3,729,643	6,214,910	
Grand Total, 1905-06	1,221,159	2,693,690	1,505,082		2,966,144	5,692,385	
Grand Total, 1904-05	994,100	2,390,539	1,214,342		2,572,375	4,780,817	
Grand Total, 1903-04	880,010	2,310,808	1,086,364		2,469,750	4,436,124	
Grand Total, 1902-03	819,985	2,307,401	1,056,491		2,299,875	4,176,351	
Grand Total, 1901-02	634,146	2,594,708	1,046,315		1,781,941	3,462,402	
Grand Total, 1900-01	565,726	1,459,100	724,015		1,727,527	3,017,268	

Tires were not specifically reported before 1910-11.

France	178,149	322,797	Australia	9,067	8,369
Germany	455,955	292,784	Total, 1909-10	6,492,947	\$7,629,380
Netherlands	2,397	2,115			
Russia in Europe	58,445	52,232	Total, 1910-11 (a)	5,267,588	\$5,439,282
United Kingdom—England	2,169,370	3,291,394	Total, 1908-09	3,791,971	2,964,496
Scotland	4,308	3,900	Total, 1907-08	4,110,667	2,994,208
Canada	3,382,153	3,376,506	Total, 1906-07	4,215,350	3,593,912
Mexico	250	55			
Japan	49,669	79,162			

(a) Details not yet published.

SUMMARY.

IMPORTS OF FOREIGN MERCHANDISE—

	1909-10.		1910-11.	
	Pounds.	Value.	Pounds.	Value.
Crude India-Rubber	101,044,681	\$101,078,825	72,046,260	\$76,244,603
Guayule gum (included with India-Rubber, 1910)			19,749,522	10,443,157
Gutta-Percha	784,501	167,873	1,648,921	390,548
Gutta-Jelutong (Pontianak)	52,392,444	2,419,223	51,420,872	2,872,633
Balata	399,003	196,878	878,305	624,702
Scrap	37,364,671	2,998,697	26,948,000	2,334,870
Total unmanufactured imports (a)	191,985,300	\$106,861,496	172,691,880	\$92,910,513
Manufactures of India-Rubber				
Manufactures of Gutta-Percha		\$1,154,347		\$875,125
		80,567		61,283
Total manufactured imports (b)		\$1,234,914		\$936,408

RE-EXPORTS OF FOREIGN MERCHANDISE—

Crude India-Rubber	6,492,947	\$7,629,380	5,267,588	\$5,439,282
Balata	73,553	42,750	264,589	230,575
Guayule gum (included with India-Rubber, 1910)			340,405	175,995
Gutta-Percha	74,137	13,886	62,391	19,235
Gutta-Jelutong (Pontianak)	2,139	112		
Scrap	61,395	5,373	401,231	43,338
Unmanufactured re-exports (c)	6,704,171	\$7,691,501	6,336,204	\$5,908,425
Manufactures of India-Rubber		\$13,568		\$29,356
Manufactures of Gutta-Percha		13,955		8,687
Manufactured re-exports (d)		\$27,523		\$38,043

EXPORTS (DOMESTIC MERCHANDISE)—

Scrap	6,143,610	\$378,944	7,049,739	\$723,664
Reclaimed rubber	3,622,556	535,795	4,994,527	781,650
Manufactures of India-Rubber and Gutta-Percha		9,060,895		10,947,248
Total domestic exports (e)		\$10,175,634		\$12,452,562
GRAND TOTALS—				
Imports (a) and (b)		\$108,096,410		\$93,846,921
Less re-exports (c) and (d)		7,719,024		5,946,468
Consumption of foreign imports		\$100,377,386		\$87,900,453
Exports of domestic merchandise (e)		\$10,175,634		\$12,452,562

THE RUBBER TRADE AT AKRON.

(By a Resident Correspondent.)

The Swinehart salesmen held their annual conference at Akron the week of September 29. Plans for the ensuing year were discussed; also the exploitation of their new cellular anti-skid truck tire. Over forty salesmen and agents were in attendance.

* * *

The Republic Rubber Company, Youngstown, O., on account of an increase in business, is building new factory buildings and is making additions to the present plant, for which purpose it has decided to increase its capital stock by an addition of \$1,000,000 of preferred stock.

* * *

The B. F. Goodrich Rubber Co. has issued its route book for Southern California, Los Angeles and San Diego. It is the first of a series of eight books, which will include all the routes now being marked by the Goodrich road markers on the

of its size in the country from the tourists' point of view. It includes all the old landmarks and points of interest in this section, and is made especially for tourists' use.

The other books will follow the Pacific routes from there further North and extend into Canada.

The Goodrich Company is certainly to be encouraged and thanked for the benefit it is conferring on the public by this advertising venture.

* * *

Irvin Renner, department foreman of The B. F. Goodrich Company, has left for Colombes, France, to install tire machinery and to organize a tire department of that company at that place.

* * *

A. G. Partridge has been appointed assistant sales manager of The Firestone Tire and Rubber Co.

This company's rim plant, on account of the construction of the new building, has been given more space and is well equipped



SALESMEN OF SWINEHART TIRE AND RUBBER CO.

Top row from left to right.—A. T. Borden, Charles Parker, E. F. Gardner, J. F. Lemmon, G. L. Moore, F. Grant, E. Flagg, C. A. Swinehart, J. G. Boss, W. G. Boyle, W. J. Kreuder, H. L. Houk, G. A. Dodge.

Second row.—M. J. O'Connor, B. F. Hadley, L. J. Brainard, A. G. Partridge, C. O. Dail, L. J. Long, M. Grey, F. H. Pierce, G. E. Grimes, J. E. Keuhlborn, A. T. Carnahan.

Third row.—F. D. Wait, E. O. Hoopengartner, J. J. Tompkins, A. J. Greene, W. W. Wuchter (president), R. A. May (treasurer), C. O. Baughman (secretary), C. W. Harris, S. G. Andrews, F. H. Burgher.

Pacific Coast. The general plan of the book will differ from that of the previous books in that, instead of having one large map which is inconvenient while touring, it will be provided with sectional maps. The map of each section is on a separate page with different route descriptions opposite. It has an index map which gives a general view of all the territory included in the book, and enables one to locate quickly the particular route map he wishes to select. In addition, city maps are furnished wherever needed. The book contains a number of valuable tire pointers, including a digest of the motor vehicle laws of the Western States.

The territory covered by this first book is from the Mexican border to Los Angeles, perhaps the most interesting district

with electric welding, shaping, rolling, galvanizing and plating machinery.

On account of the increased use of the Firestone demountable rims, which possess a quick detachable feature, the manufacture of the quick detachable rims has been discontinued.

* * *

Henry McCreary, of Indiana, Pennsylvania, is erecting a new rubber factory at Wooster, O. The main building is brick, 172 by 48 feet, two stories high. The boiler room is separate.

* * *

F. T. Lahey, representing Poel & Arnold, of New York, crude rubber merchants, has opened an office in the Second National building.

THE RUBBER TRADE IN BOSTON.

(By a Resident Correspondent.)

AN event of more than ordinary interest to the members of the rubber trade was the dedication, on November 5, of the Forsyth Memorials at St. James Church. These memorials, which are the gifts of John H. Forsyth and Thomas A. Forsyth, comprise a baptistery and marble font, with its bronze cover and silver ewer, and two beautiful stained glass windows, these being in memory of Margaret Bennett Forsyth, James Bennett Forsyth and George Henry Forsyth. (These memorials are described in detail and illustrated on another page.) The services were conducted by the rector, Rev. Dr. Murray W. Dewart, assisted by the Rev. Dr. Daniel D. Addison, rector of All Saints' Church, of Brookline. The music was by the boy choir of the church and a quartette. The dedicatory address was by the Right Reverend William Lawrence, S. T. D., Bishop of Massachusetts, who spoke eloquently of the many charities of the members of the family, and told of the virtues and nobility of the deceased. The church was filled during the exercises, there being many present who were intimate with the Messrs. Forsyth in former days, and who came to do honor to the deceased. After the services many waited to take a closer view of the handsome memorials, which all pronounced a fitting tribute to those they memorialized.

The annual conference of the agents of the Boston Belting Co. was held at the home office of the company in Boston, November 15 and 16. The conference this year was attended by the agents of the company from eastern and western states, and a series of instructive and enjoyable business sessions was held. Opinions were expressed by many of those participating that the conference this year was a greater success than any of its predecessors.

The affair was brought to a successful close on Thursday evening, November 16, when a dinner was tendered by the Boston Belting Co. to its guests at the Boston Athletic Association. The occasion was entirely informal, remarks being made by many of those present at the table, not the least enjoyable feature being the topical songs, which were, of course, apropos of some of the gentlemen present.

A. H. Alden arrived in New York on Thursday, November 16, from a trip abroad. George E. Alden and Arthur W. Stedman went over from Boston to welcome him.

Francis H. Appleton, who, it will be remembered, was one of the three officers of the Ancient and Honorable Artillery Company, of Boston, appointed to present a testimonial from that body to His Majesty, King George of England, has in his office an interesting souvenir of his visit, a framed photographic facsimile of the document. Mr. Appleton was one of the large number of members of this organization who took a trip to Bermuda early this fall, where they were splendidly entertained by the military organizations on that island.

Three little clocks, each with a face about two inches in diameter, tick synchronously on the desk of R. L. Chipman in the office of the Geo. A. Alden Co. in this city. One marks London time, another shows the hour in Singapore, and the third tells the time of day in Pará. These serve their purpose in determining the time of arrival at those important rubber centers of cable messages sent from this office. Mr. Chipman uses his pocket timepiece for local business engagements and going to lunch, though the Singapore clock comes near enough to Boston time, being practically twelve hours later.

W. M. Farwell, of the Acme Rubber Co., tired of the narrow life of a city apartment dweller, has long pined for the broader role of a gentleman farmer. He has just purchased a fine country place at Wellesley Hills and fitted it up with the very latest improvements and will "move in" (or move out) some time about the first of this month.

The Post & Lester Co., distributors of the Pennsylvania tires and dealers in motor supplies, have moved from Devonshire street to the Pope Building on Columbus avenue and are occupying the premises formerly leased by the Diamond Rubber Co.

The Empire Rubber Manufacturing Co. and the Empire Tire Co. removed from their former location the first of December to 119 and 121 Summer street, where they have secured much larger quarters, nearly double the space now occupied by them on Devonshire street. Manager Winslow H. Chadwick was away on a business trip most of last month, returning to Boston on Saturdays. F. G. Burgess, representative of the Hodgman Rubber Co., who has had an office with Mr. Chadwick, has also moved to the new location on Summer street.

The weather in nearly every section of the country has been unusually favorable for a large trade in rubber and other waterproof garments, and every manufacturer of these lines visited by your correspondent reports an excellent demand. The Apsley Rubber Co. is rushed with orders, as is also the American Rubber Co. N. Lincoln Greene, manager of the clothing department of the latter company, started on an extended business trip on the 18th ult. He reports a greatly increased demand for the finer lines in these goods, which are now being made in natty styles from fine fabrics.

And speaking of waterproof garments, your correspondent happened in the store of C. J. Bailey & Co. shortly after noon on the day of the Harvard-Dartmouth football game. Busy? Well, yes. The day was stormy and the rain sufficient to dampen the ardor of any but a football crowd, and the way the Bailey sales force was hustling was an object-lesson in business energy. It was a regular procession of try-on, how-much? here's-your-money, thanks-good-bye, for a couple of hours as men and women bought something to protect them from the rain. And the humor of it was that not a drop of rain fell after the game commenced. But Bailey sold the goods.

Colonel Frank L. Locke, who is known to a very large number of the rubber trade from his former position as superintendent of the factories of the Boston Rubber Shoe Company, is proving the right man in the right place as president of the Young Men's Christian Union in this city. Assuming this important position about four years ago, he has worked earnestly and indefatigably for broadening the field of usefulness of that grand institution. His administration has shown a marked increase in the active membership and a most practical appreciation of the improved services rendered to young men in various channels. The advantages, physical, mental, moral and commercial, which this institution is furnishing young men have been greatly increased by Colonel Locke, who is having the hearty support of many leading citizens in this important work.

The Okonite Co., 253 Broadway, New York City, has published a convenient little booklet entitled "Economy in Joint Making, With Instructions," which contains seasonable information in regard to making repairs in the way of insulating and protecting joints so that short circuits, with their accompanying troubles, may be avoided.

THE RUBBER TRADE IN RHODE ISLAND.

(By a Resident Correspondent.)

IN striking contrast with the cotton mills by which it is surrounded, the Providence plant of the United States Tire Co. is being enlarged constantly, and the force of employes is being increased. The principal product of the concern is the Continental tire.

This company began operations in the old plant of the Banigan Rubber Co. on Valley street last July, and since that time it has enlarged a number of the buildings, erected storehouses and improved the property generally. The number of employes has been increased from 150 to 950, and more are being engaged at present. Full shifts are kept at work night and day.

At the wire insulating mill within the enclosure of the National India Rubber Co.'s plant at Bristol, Rhode Island, a new system of conveying power to buildings connected with the wire department, where there was previously no power, has been introduced.

The work was completed during the early part of the week ending November 11 by Contractor W. G. Murphy, of Warren. Framework supports on concrete foundations convey the power by means of ropes, this method having been found superior to belts. This apparatus provides power in buildings where more machinery can be installed without adding to the electrical equipment of the concern.

The Consumers' Rubber Company has recently shipped a large number of cases of footwear from its factory in Bristol to Tacoma, Washington, and vicinity.

Lack of orders recently has caused the International Rubber Co., makers of rubber fabrics, to put its plant at West Barrington on a four-day-a-week schedule.

Employees of the Woonsocket Rubber Co., a subsidiary of the United States Rubber Co., at Woonsocket, in common with operatives in other manufacturing plants in that city, have been undergoing wholesale vaccination during the past two weeks, as a result of a smallpox epidemic in the Pawtuxet Valley, where nearly 150 cases have developed. The French Canadians of the two localities visit each other so constantly that Woonsocket officials have feared the recurrence of an epidemic that greatly affected business there in 1900-'01-'02.

THE RUBBER TRADE IN SAN FRANCISCO.

(By a Resident Correspondent.)

ALREADY the merchants are taking notice that the Panama Exposition will bring about an increased activity. The inquiries which have emanated from headquarters indicate that the matter of fire protection for the entire city, as well as the fair grounds, will be one of the first matters looked into, and the merchants with fire hose to sell will be in line for an early improvement in this class of business. But the opening of the Panama Canal and the activity preceding the opening of the exposition are bound to work great and beneficial results. Business at present is normal, with considerable room for improvement in every line, saving, perhaps, that of tires, which continues to keep up a very high degree of activity.

E. R. Metcalf, of the Rubber and Asbestos Packing Co., Denver, Colorado, died on October 19.

W. D. Rigdon has been appointed manager for the San Francisco store of the Gorham-Revere Rubber Co. J. B. Brady, the general sales manager of this company, is now out visiting the

branches throughout the North. W. H. Gilbert, the treasurer, is also out making a trip to the various branches, and will then make a trip East.

A. F. Solbery, representing the United States Rubber Co., has been on a visit to the coast, and after taking in the principal cities has returned to his offices in Chicago.

The Gutta Percha and Rubber Manufacturing Co. reports that business is moving along with fair satisfaction, and that the outlook is a little better than usual.

Mr. Miller, of The B. F. Goodrich Co., reports that business is much better just now in the tire line than in the mechanical department, but that trade is showing up better all around, and that they expect a very good business in the mechanical department beginning with the first of the year.

J. A. Jones, who has been salesman at the Second and Mission street headquarters of The Diamond Rubber Co. for two years, has been appointed branch manager of this company's retail store at Golden Gate and Van Ness avenues. He succeeds Harry Ingersoll, who resigned to take the position of sales manager with the Keaton Vulcanizing Co.

R. H. Pease reports for the Goodyear Rubber Co. that last month and the first of this showed a favorable business. All of the rains so far have been in the night time, which has not served to boost rubber clothing much. Otherwise business is running along naturally, with a good increase over last year, which is not saying much, however, as it was very dull at this time in 1910. The new calender, mill and tubing machines have been installed in the factory, and this has necessitated the doubling of the floor space.

James F. Giles, of the American Hard Rubber Co., is now making his annual visit to the Pacific Coast, and stopping while here with the Goodyear Rubber Co.

W. G. Chanslor, of the Chanslor & Lyon Motor Supply Co., whose home is in Los Angeles, spent a few days in San Francisco on his return from a hunting trip by automobile in the northern part of the State, accompanied by his wife and some friends.

R. H. Keaton, manager of the Keaton Vulcanizing Works, has left for Akron, where he is having a special non-skid tread placed upon the Swinehart tires, which he represents on the coast.

The Weinstock-Nichols Co., dealers in tire and auto supplies, have leased for ten years for \$65,000 a three-story building, to be erected on the north side of Golden Gate avenue, west of Polk street.

Charles W. Crockett, manager of the Edson & Crockett Tire Co., 124 Hyde street, was seriously injured by an accident, which occurred near Hillsborough. While riding a motorcycle he was struck by a wagon, thrown from the motorcycle and rendered unconscious. He was picked up by a passing automobile and carried to the Red Cross Hospital at San Mateo, being later brought to his home in this city. His condition is very serious.

J. D. Anderson, general sales manager of the United States Tire Co., is making a tour of inspection of all the Western branches. He was met in Salt Lake by J. C. Weston, of San Francisco, the coast manager. They are taking in the entire coast—Seattle, Portland and the other leading cities of the Northwest, thence

San Francisco and Los Angeles, and other California cities. Mr. Anderson was formerly president of the Hartford Rubber Works Co. This is his first trip West since taking up his present position with the United States Tire Co. The firm's many branches on the coast are all doing well. The new store in San Francisco, now being erected at Golden Gate and Van Ness avenues, and soon to be ready for occupancy, will be one of the finest of all.

The W. D. Newerf Rubber Co. has secured the agency for the Miller tires, manufactured by the Miller Rubber Co., of Akron, Ohio.

The Batavia tire, made by the Batavia Rubber Co., of Batavia, New York, is now represented on the coast for the first time by F. W. Burgers, of San Francisco, who has just returned from a six weeks' visit to the tire factories in the East. Mr. Burgers has been identified with a number of local rubber houses and has only recently decided to go into business for himself. He has opened a store at 409 Golden Gate avenue.

The Michelin Tire Co. has established wholesale quarters in Los Angeles at 749 South San Pedro street. It has no retail branch there and in this respect has made a decided innovation. J. M. Cummings, the Pacific coast manager, explains this method as being the way the business will be handled in the future by all tire manufacturers, and they are only anticipating conditions. He says that tires are simply accessories to automobiles and the proper method of distribution is through the automobile and accessory houses. All that a tire factory needs to establish is a jobbing branch. The new establishment will be managed by J. R. Wells, who comes from the San Francisco branch. I. H. Saddler, from the Seattle branch, has taken the position left vacant by Mr. Wells, and E. J. Hawke has been sent from San Francisco to take the management in Seattle.

UNITED STATES RUBBER CO.'S ISSUES.

Transactions on the New York Stock Exchange for five weeks, ending November 25:

COMMON STOCK, \$25,000,000.

[The treasury of a subsidiary company holds \$1,334,000.]

Last Dividend, October 31, 1911—1%.

Week November 4	Sales 11,700 shares	High 44½	Low 42
Week November 11	Sales 16,395 shares	High 46½	Low 44½
Week November 18	Sales 17,020 shares	High 47¾	Low 46¼
Week November 25	Sales 4,600 shares	High 47¾	Low 46¾

For the year—High, 47½, March 1; Low, 30½, September 25.

Last year—High, 52½; Low, 27.

FIRST PREFERRED STOCK, \$39,824,400

Last Dividend, October 31, 1911—2%.

Week November 4	Sales 900 shares	High 107	Low 106
Week November 11	Sales 1,000 shares	High 109	Low 107½
Week November 18	Sales 700 shares	High 110	Low 109
Week November 25	Sales 685 shares	High 109½	Low 108¾

For the year—High, 115½, July 7; Low, 104, September 25.

Last year—High, 116½; Low, 99.

SECOND PREFERRED STOCK, \$9,965,000.

Last Dividend, October 31, 1911—1½%.

Week November 4	Sales 300 shares	High 73	Low 72
Week November 11	Sales 1,200 shares	High 76	Low 74
Week November 18	Sales 1,000 shares	High 76½	Low 75¾
Week November 25	Sales 200 shares	High 75	Low 75

For the year—High, 79, March 1; Low, 66, September 26.

Last year—High, 84; Low, 59½.

SIX PER CENT. TRUST GOLD BONDS, \$19,000,000.

Outstanding of the 1908 issue of \$20,000,000.

Week November 4	Sales 41 bonds	High 103¾	Low 103¾
Week November 11	Sales 36 bonds	High 104	Low 103¾
Week November 18	Sales 32 bonds	High 104	Low 103¾
Week November 25	Sales 29 bonds	High 104	Low 103¾

For the year—High, 105, July 15; Low, 101¾, September 30.

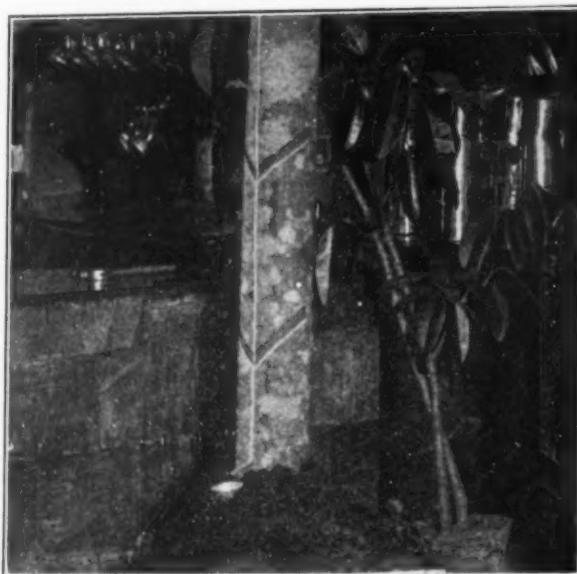
Last year—High, 106; Low, 102¾.

A REMARKABLE FLOW OF LATEX IN BOSTON.

THE Chinese rubber tree, in the Arnold Arboretum, in Jamaica Plain, a suburb of Boston, has excited considerable comment, but the discussion to which it has given rise does not compare with that occasioned by the extraordinary rubber tree which was displayed in the Hood rubber exhibit at the Educational and Industrial Exposition recently held in that city.

Hitherto, it has been considered necessary to take a trip of at least 2,500 miles down to Pará and up the Amazon in order to see the *Hevea Brasiliensis* giving forth its valuable contents, but here was a specimen of *Hevea* right in the heart of Boston, giving out a fine, full, free flow of latex several times a day.

The tree was visited by a large number of people. A painstaking mathematician, after some very careful calculations, concluded that, at the rate of this daily flow, the tree ought to produce about two tons of the finest Pará annually. The tapping was done by the familiar half herring-bone system, and the



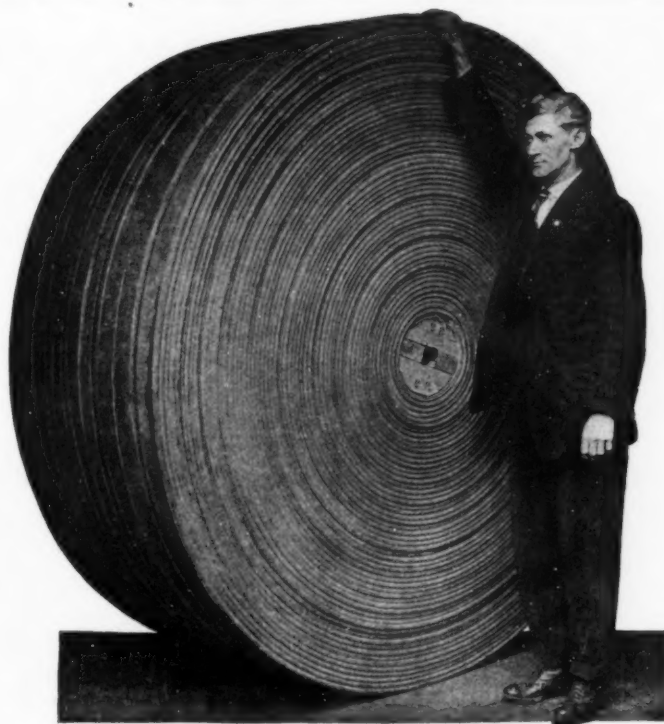
"ELASTIC HOODENSIS."

advocates of this system found very much to corroborate them in their belief in the generous results attained in this particular instance.

This remarkable rubber tree was particularly interesting to the botanists, for while in many of its aspects it appeared to belong to the *Hevea Brasiliensis* family, there were some marked differences. It was finally determined that it was an entirely new species, namely, the *Hoodensis Elastica*.

The accompanying illustration shows a small section of the tree—from the ground to a distance of five or six feet—which gives a fair conception of its appearance, but conveys very little idea of the great amount of attention it received.

Mention was made in our November issue of a guessing contest carried on at the display of the Hood Rubber Co. at the New England Industrial and Educational Exposition in Boston. A half biscuit of rubber was displayed and visitors were invited to guess its weight. There were 18,000 guesses recorded. The weight was 67 pounds 9¼ ounces. Six of the guesses came within a quarter of an ounce, with 67 pounds 10 ounces, and four came within three-quarters of an ounce, with 67 pounds 9 ounces. These ten fortunate guessers were rewarded by presents of footwear made by the company.



GOODRICH CONVEYOR BELT

A REPRESENTATIVE product and in keeping with the Goodrich principles of reliability and fair dealing. Long years of experience have enabled us to develop the particular quality to form a reliable and economical belt, and both manufacture and selling are guided by an intimate experience of belt conveyor practice.



THE B.F. GOODRICH CO.
AKRON, OHIO, U.S.A.



NEW YORK BELTING AND PACKING CO., Ltd.

MANUFACTURERS OF A COMPLETE LINE OF HIGH GRADE
MECHANICAL RUBBER GOODS

Including Cobb's Piston & Valve Rod Packing, Indestructible White Sheet Packing
Vulcan High Pressure Spiral Packing, "1846" Para Rubber Belting,
Magic Garden Hose, Air Brake, Air Drill, Steam,
Suction, Water Hose, etc.

Original Manufacturers of Interlocking Rubber Tiling.

Nos. 91-93 CHAMBERS STREET, NEW YORK

ECOE SIGNUM.



THOROUGHLY RELIABLE.

The policy of furnishing only the finest goods that can be produced with perfect materials, latest and best machinery, and highly skilled workmen of long experience, has been, is now, and will continue to be, the policy of

The Mechanical Rubber Company,
CHICAGO, ILL.

Branch Store, No. 1810 Blake Street, Denver, Colo., where we carry a full line of goods.

Manufacturers of all kinds of rubber goods for mechanical uses—Hose, Belting, Packing, Gaskets, Bicycle Tires, Specialties, Moulded Goods, Etc., Etc.

If you are unable to satisfy your trade with goods you are supplying,
If you are in search of good goods at fair prices,
If you cannot get quick deliveries,
If you are not getting fair value for your money,
IN ANY EVENT,

} SEND TO US FOR SAMPLES AND
QUOTATIONS.
WE CAN SUIT YOU EVERY WAY.

FACTORY, GRAND AVE. & ROCKWELL STS

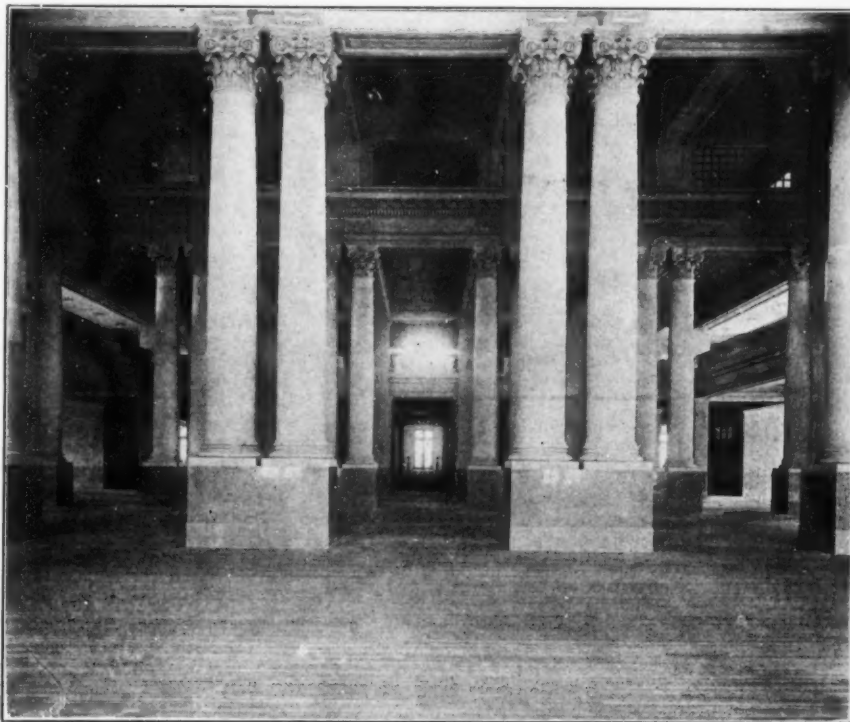
THE MECHANICAL RUBBER CO., 230 Randolph St., Chicago, Ill.

WIDE INTEREST IN THE 1912 RUBBER EXPOSITION.

THE announcement that a rubber exposition will be held in New York in the fall of the coming year has been greeted with profound interest not only in rubber circles in this country, but also abroad and in the rubber planting countries. The work of organization has proceeded very rapidly, and the large number of leading rubber men who have already signified their desire to be actively identified with this exposition gives every assurance of its success.

It will greatly interest the readers of this paper to know that Sir Henry A. Blake, G.C.M.G., who acted as president of the highly successful exposition held in London last June and July, has consented to act as president of the European section of the New York exposition. In addition to this acceptance on the part of Sir Henry Blake, which is in itself an augury of the prominent part that Europe will take in this exposition, at least 70 of the leading rubber men of England, the Continent and the East have accepted positions on important committees. This number includes prominent officers in plantation companies, financiers connected with the rubber industry, experts and scientists identified with the development and progress of rubber culture, manufactures, and the editors of practically all the rubber publications in Europe and in the Middle East.

The response in this country has been no less enthusiastic, and from the present returns it is safe to say that practically all the leading rubber men of America will have some part in this international exhibit. The exposition will be under the auspices



GRAND CENTRAL PALACE—VIEW OF EXHIBITION HALL.



GRAND CENTRAL PALACE—VIEW FROM LOBBY OF GRAND STAIRCASE.

of the International Exposition Co., Inc., of New York, whose directors are: Samuel A. Miles, manager National Association Automobile Manufacturers; Richard G. Hollaman, president Eden Musee, American Co.; James C. Young, secretary and treasurer Madison Square Garden; Edward P. B. Ritter, president Merchants' and Manufacturers' Exchange of New York; Charles E. Spratt, vice-president Merchants' and Manufacturers' Exchange of New York; and J. A. H. Dressel, managing director Madison Square Garden.

The two accompanying illustrations show interior views of the Grand Central Palace, New York City, where the exposition is to be held. It is called the finest exposition building in the world.

Recent visitors to the United States were Dr. Paul Stockhardt and the head engineer, Mr. A. Davids, of the Hannoversche Gummi-Kamm Company, of Hannover, Germany. Both of the gentlemen expressed themselves as very much pleased with the courteous treatment they received from the American rubber factories, which they visited during their brief stay.

The Forsyth Memorials in St. James Church, Roxbury, Mass.

ON Sunday, the fifth of November, Bishop Lawrence dedicated a striking group of memorials, which form another record of the generosity of Messrs. John H. and Thomas A. Forsyth. These comprise a baptistery and marble font (with its bronze cover) and two stained glass windows; all in memory



ROSE WINDOW REPRESENTING ST. MARGARET.

of Margaret Bennett Forsyth, James Bennett Forsyth and George Henry Forsyth.

Of the two windows, the smaller, in the baptistery, represents St. Margaret of Scotland holding the "Black Rood" or Cross, and gathering under her mantle an old man and two children in commemoration of her notable charity, and in recognition of the same quality in Mr. Forsyth's sister, who bore the name of this Patron Saint of Scotland. On either side are the Scottish arms and those of the family of Forsyth, and in the background is a scroll, with the inscription, "Sancta Margarita Regina Scotiae." The window is on the lines of the XIIIth century glass of France, and is extraordinarily rich in color. The second window is in three lights, with rich stone tracery above. It shows in the center the figure of St. John the Evangelist as a young man, with the text below, "I heard a voice from Heaven." On one side is a symbolical figure of Mercy; on the other a figure of Peace. The orders given the makers were that this window should be the most perfect example of stained glass that could possibly be produced, and the result is one of the most beautiful windows in the city of Boston.

The baptistery is perhaps the most striking of the memorials. Two great cylindrical columns support a richly moulded Gothic arch; the floor is raised three steps above the floor of the church, the steps themselves being of limestone, the paving of Grueby tiles of rich and harmonious color. The font, which stands on a series of steps modeled after a famous example in England made of rose-colored Tennessee marble, is perhaps the most delicate and beautiful example of stone carving ever produced in America. The font itself is of pure white statuary marble, very rich in design, and carved into the most delicate

lacework. It bears on its stalk six coats of arms wrought with the delicacy of an Italian cameo. These arms are those of the United States, England, Scotland, France, and the families of Bennett and Forsyth. The canopy is entirely of golden bronze and consists of a cover wreathed with intricately-wrought vine leaves, and supporting a statue of St. John the Baptist as a child. This canopy was the work of the famous English artist, Mr. Henry Wilson, and is the first example of his art that has been brought to America and put in a public position. He is looked upon in England as one of the greatest art workers of the day. He was trained under the late John D. Sedding and occupies an unique position in the world of English and Continental art.

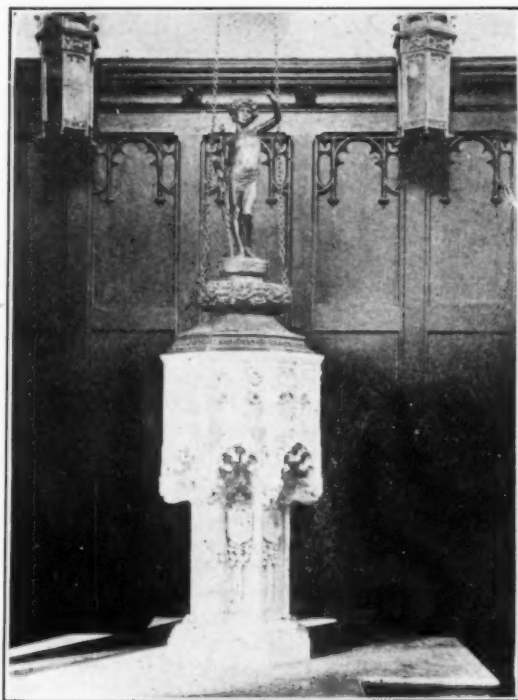
The walls of the baptistery are panelled in oak of rich and decorative design, and behind the font are two bronze lanterns.

All the memorials mentioned above are executed from the designs and under the direction of Cram, Goodhue & Ferguson, architects, of Boston and New York.



THREE-PANEL WINDOW WITH ST. JOHN IN CENTER.

Accompanying the font is a very handsome silver ewer, especially designed and made by the Gorham Company, Providence, Rhode Island.



MARBLE FONT WITH BRONZE COVER.

It should be said that the donors have shown the keenest and most intelligent interest in every portion of the work, supervising all the designs, criticising them from time to time, and following the executing of the work during its various stages.



BAPTISTERY FONT.

TWO RECENT LONDON EXHIBITIONS.

THE LONDON SHOE SHOW.

THE Seventeenth Annual Shoe and Leather Exposition, that was held in the Royal Agricultural Hall in London during the week ending November 4, was an interesting one from a rubber standpoint. There were some twenty exhibitors of rubber goods, among them two American concerns—the United States Rubber Co. and the Hood Rubber Co.

The United States Rubber Co. had a very attractive exhibit in the center of the hall, in which they showed samples of "Boston" and "Bay State" rubber boots and shoes and also some tan styles in sandals and croquets, and quite a full line of yachting and tennis shoes.

The Hood Rubber Co. also had a complete line of its goods on exhibition, including boots, sandals and footholds, and its new "Convertible" overshoe, which is an interesting specimen of footwear, inasmuch as it is a sandal which, when the heel is worn off, can be readily converted into a foothold by cutting off the heel with a pair of ordinary scissors along a line indicated on the shoe. This company also displayed an assortment of tennis and gymnasium shoes.

Among the English exhibitors the North British Rubber Co., Limited, had a very large exhibit, showing a complete assortment of its footwear and also its instep pads, rubber shoe soles and revolving and stationary heel pads.

A striking feature of the rubber department of the exhibition was the large number of different heel pads exhibited. There were no particular novelties in these heels except in certain methods of attachment. There were 110 different styles of heels, including revolving and stationary, shown by the different exhibitors. To an American the low prices at which some of these rubber heels are sold seems almost incredible, some being made to sell to the retailer and shoe repairer at four cents, and even in some cases as low as two cents a pair, for which they charge, affixed to the shoe, twelve cents a pair. This exhibition, however, showed a growing tendency on the part of the manufacturer to make a better grade heel that could be sold to the trade at twelve cents a pair, and would cost the consumer twenty-five cents when attached to the shoe.

THE LONDON MOTOR SHOW.

THE Tenth Annual International Motor Exhibition was held in Olympia, London, during the eight days from November 3 to November 11. This was probably the best exhibit of tires and other rubber accessories of motoring ever held in that city. The main floor was given over to the display of cars, and the tire and general accessories exhibit was held in the gallery. There were many English exhibitors and a few from other countries, among them The B. F. Goodrich Co., of Akron, Ohio, which had an excellent display of their all-rubber non-skid tires, and also of their metallic studded non-skid tires.

Among the striking English displays were those of the North British Rubber Co., Limited, which showed five different varieties of the famous Clincher tire; and the Dunlop Rubber Co., Limited, which presented a comprehensive assortment of automobile garments, gloves, leggings, caps, goggles and other articles used in motoring. The Continental Tyre and Rubber Co., Limited, gave an excellent exhibit of tires, some with steel non-skid treads.

In addition to tire displays, there was an extensive exhibit of repair equipments, patent patches, jackets, and other incidentals to tire use.

The exhibition on the whole was a marked success.

An American consul reports that he has received an inquiry for the name of an American dealer in rubber boots and shoes having a European representative, through whom these goods can be secured. The number of the request is 7,636.

London and Liverpool Auctions and Contracts.

JUST how rubber is auctioned in London or Liverpool is often asked even by those who purchase largely in those markets. When the writer visited the Liverpool auction rooms that city was the greatest rubber market in the world. That, however, was before the day of plantation rubber, and since then many other great markets have been created.

The auctions occurred on Wednesdays in a public salesroom in the Exchange. After advertising in the daily papers and sending printed lists to rubber merchants, the firms having rubber to sell are ready to show samples in the warehouses or to furnish descriptions of the lots offered. Half a hundred perhaps gather at the auction. The auctioneers for the various sellers read a description of the lot, then pause for bids. Sometimes there is much interest and quick bidding; at others it is as quiet as a Quaker meeting, with lots only partly sold and many bids rejected. The London auctions at Mincing Lane occurred, I believe, on Fridays and were similar to those at Liverpool.

The London and Liverpool form of contract dates back to April, 1901—that is, for Pará, Peruvian and Bolivian rubber. At that time it was adopted by all of the leading houses. The terms are as follows:

CONTRACTS.

No. 1.—When a parcel is sold for a specified shipment, or for shipment by a specified steamer, with a guarantee of quality—other than Fine or Entrefine rubber—and found inferior, buyers must accept same with an allowance, provided such allowance in the opinion of the arbitrators be not more than 3 per cent. of the contract price; but should the parcel be rejected, the seller to have the option of substituting guaranteed quality on the spot to fulfil his contract within three days, otherwise Clause 6 to apply; but in the case of contracts made for delivery during a specified month, or months, should any portion tendered prove inferior to guarantee, buyers shall have the option of rejection, and the portion so rejected shall not constitute a delivery on the contract.

TENDERS.

No. 2.—The first buyer must receive any tender not later than 3 o'clock p. m. (Saturday, 12 o'clock noon), and subsequent tenders must be received by the respective buyers not later than 4 o'clock p. m. (Saturdays, 1 o'clock p. m.).

Should a telegraphic tender be received by a buyer after the times above named, provided there has been no undue delay in despatch, tender shall date from the following day, but weighing over shall take place as from the original tender date. All tenders must be passed on with due despatch.

No. 3.—For a tender to be good, the original seller must be in a position to allow inspection the same day should buyer so require; and seller must furnish, on application, delivery order to buyer without undue delay, and not later than 12 o'clock noon of the day following the date of tender, provided the latter duly complies with the conditions of payment.

A delivery order to be valid must be a clear title to the goods. The onus of proving that it is not valid to rest with the buyer.

No. 4.—When a parcel is tendered, an inspecting order with original seller's name and reference number must accompany the tender, and such particulars must be inserted in each successive tender.

No. 5.—On contracts of five tons and upwards, buyers have the option of refusing tenders of less than one ton, except in completion of contract.

No. 6.—Whenever it may be admitted by the seller, or decided by arbitration, that the seller has failed to declare or tender goods to fulfil any contract, the buyer may close the contract

and at his option invoice back the produce to the seller at once, at a price and weight to be fixed by arbitration (which price shall not be less than $\frac{1}{2}$ per cent. nor more than 10 per cent. over the estimated market value of the shipment or delivery contracted for on the day upon which the default occurs), the difference to be due in cash in fourteen days from such default. Should any parcel tendered after the 24th day of the last month of delivery be rejected, sellers may claim one week from date of such rejection to replace same, but this concession shall not apply to any parcel which, in the opinion of the arbitrators, is not a *bona fide* tender within the terms of the contract.

No. 7.—In the event of a tender of fine rubber being found on inspection to contain an admixture of entrefine, the sellers shall not be required to re-tender same after selection unless such admixture be 5 per cent. or over.

INSPECTION.

No. 8.—Buyers may, in case of need, demand that sellers open 20 per cent. of the number of cases in a parcel sold or tendered, and sellers shall guarantee the portion shown to be a fair average of the bulk, but no claim as to quality or "condition" shall be made after the goods have been weighed over to buyers, except in the case of false packing.

No. 8a.—The cases or packages shown to buyer at time of inspection shall be marked and retained intact by the seller until completion of delivery of the lot or lots of which they form part.

In the event of arbitration the seller must produce for the arbitrators the actual cases shown to the buyers at the inspection.

No. 9.—A seller shall at the request of a buyer grant a *second inspection*, but shall have the right to tare and weigh over at the same time the cases opened for such inspection.

No. 10.—In all cases when an *Order for Inspection* is given, seller must insert sufficient particulars to identify the parcel out of which delivery is to be made. The signing of an order for inspection shall entitle the buyer to eventual delivery of the goods specified therein and, should any substitution be made, buyer may claim a fresh tender and also arbitration to assess the amount of damages, if any, to be paid by the seller.

ARBITRATION.

No. 11.—Sellers and buyers may select any member or representative of any recognized firm in the Pará trade, in London or Liverpool, to act in the capacity of arbitrator.

UNCUT RUBBER.

No. 12.—No fine rubber which arrives in an uncut state shall be tenderable on a contract for forward delivery—this rule not to apply to any parcel shipped prior to August 1, 1901. Any parcel shipped before August 1, 1901, shall not be tenderable until fourteen days after completion of cutting and selection.

No. 13.—Island, Jary, Xingu, or Cameta, Fine, Entrefine and Negroes due for weighing-over on the third working day after date of contract or tender, unless otherwise stipulated.

Customary allowances, actual tare, and $\frac{1}{2}$ per cent. draft. Payment, cash (before delivery if required) in 14 days, less $2\frac{1}{2}$ per cent. discount.

AVIATION IN WAR.

THE first practical value of the aeroplane in war has been demonstrated by the Italians in their present disagreement with the Turks, where two aeroplane scouts were able to get valuable information regarding the movements of the Turks for the Italian garrison.

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

THE leading article on this subject, in THE INDIA RUBBER WORLD of October 1, in its statements and deductions emphasizes the opinion I have frequently expressed, though I am not prepared to say that the business is even more of a secret industry today than it was twenty years ago. When the

SECRETS IN RUBBER MANUFACTURE.

writer of the article expresses some surprise at this, in face of the "constant interchange of ideas among foreign and domestic managers and superintendents," and "their inspection of each other's plants," he is, of course, referring to American procedure, because in Europe, generally, there has been nothing of this "give and take" business. The English or German manufacturer does not discuss points of manufacture with his competitors, nor does he, except in very special instances, allow strangers to inspect his works. Apropos of this point, I am told that the ease with which foreign manufacturers could formerly obtain permission to visit and thoroughly inspect American rubber works is not reflected in present-day procedure, permission being now by no means readily given. I have often heard English manufacturers express their surprise, as well as their gratification, at the facilities afforded them of gaining additional trade experience at American factories, but I have never heard that it has caused them to be less exclusive with regard to their own factories when they have returned home. With regard to the statement that "as far as the world at large is concerned, the manufacture is wholly secret," if this holds good it is merely the result of indifference. The main facts of the manufacture are to be found nowadays in several books devoted to the subject, and there is no excuse for anyone who wishes to inform himself remaining in a state of ignorance regarding same. Trade secrets, however (among which I include apparently trivial details of manufacture), are not to be found in these books. Dozens of instances of what I have in mind might be cited, but it does not seem worth while taking up space with them. The matter, of course, is of importance with regard to the attempts which are being made to standardize rubber analyses. Personally, I was never optimistic as to the benefits to be expected from the co-operation of the manufacturers, one or two of whom were elected on an International Committee formed in London a few years ago. As these manufacturers were not chemists, their co-operation could only have been of benefit, so far as they let themselves go on the details of their factory procedure. With regard to the trade generally, I understand that hardly any replies were given to a set of queries duly drawn up, and addressed to the several manufacturers. In America, also, much the same thing was the experience of the Rubber Section of the American Chemical Society, with the result that the projected good work is in danger of being abandoned. This is not, as far as I am concerned, a case of being wise after the event, because I expressed pessimistic views at the inception of these schemes for progress and reform. Human nature will not be altered at the beck and call of this or that individual or committee, and it may as well be recognized that the difficulties induced by the exclusiveness of manufacturers are of such magnitude, as will not be easily overcome by those who essay light-heartedly to undertake the task.

In conclusion, I may perhaps be allowed to refer to the important subject of the washing of wild rubber, treated in another leading article in the same issue. The writer ignores altogether the existence of a feeling among individual manufacturers that, by special processes of their own, they can wash and dry rubber in a way such as will give a product superior to that obtained

by their competitors. Possibly, such a contention would, if closely investigated, be found greatly exaggerated. However, such methods exist and come under the category of trade secrets. The writer of the article says that it is not a fact that the trade knows what they are getting when they buy raw, unwashed rubber. Well, I cannot endorse this as a result of conversations with large buyers. The point they make is that they *do* know what they are getting when they buy rubber in the raw, and that they *do not* know when they buy it in the washed or semi-washed state. Whether or not they have any grounds for doubting the statements made to them with regard to washed rubbers, I have no idea, but it is a fact that in a good many quarters skepticism is rampant.

As was the case a year ago, Mr. Rawson, chairman of the Endurite Company, Limited, at the annual meeting in October,

THE RE-FORMING PROCESS.

had a good deal to say with regard to the present position and prospects of the Premier Re-forming Company, Limited, of which he is the promoter and consulting engineer. In the prospectus the experts used a somewhat cryptic statement to the effect that the re-formed rubber was in appearance in every way equal to new rubber. However, it appears that this assertion is not considered satisfactory or convincing by such large consumers as have habitually in their tender forms expressly barred the use of old rubber. The continued existence of this bar has led to the Premier company putting down plants to enable them to supply ordinary goods made from new rubber, where such are stipulated for. In this respect, therefore, they are ordinary rubber manufacturers and have to meet the close competition that exists. The Premier company, it appears, have made great progress in their sales of re-formed rubber goods, and all they want is an increase of business to pay dividends. This is a platitude which no doubt finds an echo in the breasts of many of us. It is interesting to hear that re-forming has already got beyond the stage of moulded goods, and that inner tubes are now in the market and are giving every satisfaction. Further experiments are in progress for the re-forming of wrapped goods made from the highest quality of rubber. The fact that the Premier company now has 483 customers, the majority of whom have sent repeat orders, ought to finally dissipate the erroneous impression that still exists in some quarters that re-formed rubber is no good. The new rubber goods are to be supplied by a new company, the Walthamstow Rubber Company, with a capital of £20,000. This company acquires a license to manufacture the new L. A. P. tire for taxicabs at a royalty of 10s. per tire. This tire, which is said to have given very satisfactory trials, has no inner tube and does not contain any fabric. It will be seen, then, that new rubber goods and re-formed rubber goods are to be made in the future side by side at the Walthamstow works and will be supplied to the public, the former by the Walthamstow company and the latter by the Premier company.

About two years ago the A. R. Syndicate, Limited, was formed with an authorized capital of £10,000. Of this, 9,000 fully paid £1 shares were issued to the vendors, the only other shares issued being to the value of £7. On June 11, 1910, the shareholders were asked to subscribe to further shares at par, but the response being so small, the directors did not proceed to allotment. It should be said that the syndicate was formed on the basis that the vendor was to bear all the expense of demonstrating the value of the process. This condition is said

ANOTHER SYNTHETIC RUBBER GONE WRONG.

to have been satisfactorily carried out in London, but the yield of rubber—from the tar which was the basic material—was not up to what had previously been obtained in Paris.

As efforts to obtain further capital have failed, it was decided to place the syndicate in liquidation, and a motion to that effect was put forward at the extraordinary general meeting, held after the ordinary meeting on October 31, in London. The chief creditor is the secretary for office rent and advances. There are several shareholders who got in at 30s. per share, on faith in the brilliant future predicted, and presumably the shares dealt in were those allotted to the vendors.

These works, which are adapted for the manufacture of mechanicals, are now on offer as a going concern. The company

THE UNITY RUBBER CO., LTD.

is housed in a mill adjacent to the waterproofing works of J. Mandelberg & Co., Limited, at Pendleton, Manchester. Formerly (that is, two or three years ago) it was located in the mill of the defunct Hyde Rubber Works, Limited, being a resuscitation of the latter under a new name by Messrs. Mandelberg, who had bought the plant and machinery when the Hyde works were sold by auction. At one time the Hyde works, when they were known as the Hyde Imperial Rubber Company and were owned by Messrs. Cresswell & Cohen, did very well. This was at the commencement of the cycle tire boom. At a later period, however, misfortune overtook the concern, and this misfortune seems to be dogging it yet. Of course, the sale of the Unity Company has nothing whatever to do with the business of J. Mandelberg & Co., which shows continued progress year by year.

This company is now engaged in making considerable extensions to its existing premises at Neate street, Camberwell, London.

THE DERMATINE COMPANY, LTD.

This has been necessitated not only by a general increase of business, but particularly by the enlarged demand for the Dermatine valve fitted with the patent anchor bush. This is largely used for the Edwards and other air-pumps. The company has of late years developed a regular business with gold-mining companies. One article in particular demand is Dermatine belting, 80 yards long and 23 inches wide, for Ingersoll drills, while another is Dermatine hose for compressed air drills. Mr. C. R. C. Hart, who has for so many years been connected with the management, was in August last appointed managing director.

There is not to be any general strike among rubber workers, such as was referred to in these notes a few months ago at the period of general unrest. There have

THE RUMORED STRIKE.

been some small strikes, concerned with individual works, and no doubt there will be others of similar importance. The workers, however, are not yet in a sufficient state of organization to initiate a general strike with any real hope of success. There is, however, a movement on foot to form a general rubber workers' union, and when this matures we shall see—well, what we shall see.

Messrs. Dreyfus & Gaisman have started new works called the Hooley Hill Rubber Company at Guide Bridge, near Manchester. The main branches are rubber

NEW WORKS.

reclaiming and rubber heel manufacture. Mr. Dreyfus is a brother of Dr. C. Dreyfus, managing director of the Clayton Aniline Company, Manchester, a concern which has long been engaged in the manufacture of ordinary and special solvent naphtha for the proofing trade. These works, by the way, have recently passed into the hands of Swiss owners, though the present management remains in office and the solvent naphtha business goes on as before.

SEND for Index (free) to Mr. Pearson's "Crude Rubber and Compounding Ingredients."

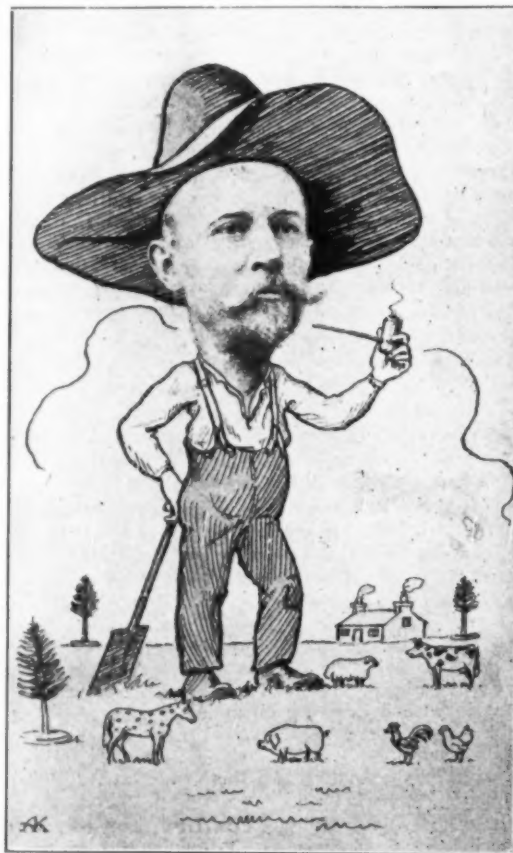
A FINE ADVERTISEMENT FOR CLINCHER TIRES.

The cut shown below of an automobile with a body in the form of a large imitation of a section of a clincher tire is a



NORTH BRITISH RUBBER CO. DELIVERY VAN.

fine advertisement, as it is bound to attract a great deal of attention wherever it is seen. It is a creation of the North British Rubber Co., Limited, Castle Mills, Edinburgh, Scotland.



THE EDITOR AS SEEN ABROAD.

Our esteemed contemporary "The India Rubber Journal," of London, has heard that the editor of THE INDIA RUBBER WORLD has possessed himself of a farm. Acting on that information, it recently produced the above exact and painstaking picture with this caption: "Back to the Land. Mr. H. C. Pearson, Editor of our New York contemporary, has taken up farming."

Some Rubber Interests in Europe.

A DEPENDABLE LINE OF MACHINERY.

A COMPLETE and effective line of rubber plantation, rubber factory, gutta percha and balata machinery is made by David Bridge & Co., Limited, engineers and rubber machinists, of Manchester, England, and sold extensively wherever rubber is grown or manufactured.

Among the specialties made by this company are a three-bowl steam-driven calender; easy to reverse and said to do exceedingly effective work; hydraulic, belting and sheeting presses made with three platens or two-day lights, twenty-five feet long and fifty inches wide, complete with hydraulic gripping and stretching features, claimed to be the largest made in England, or on the Continent.

The Bridge company issue a number of comprehensive and profusely illustrated catalogues indicating the size, appearance and general province of their various machines, which may be had upon request.

This well-known machinery is produced under the personal supervision of Mr. Robert Bridge, the head of the house, and one of the most successful rubber machinery men in Europe.

E. DE HAEN'S NEW YORK AGENTS.

Here is a view of the extensive plant of E. De Haen in Seelze, near Hannover, Germany, a concern now celebrating the fiftieth anniversary of its founding by Dr. Eugen De Haen. This is one of the oldest and largest chemical factories in Europe.

One of the chief specialties manufactured by this firm is sulphuret of antimony, used in the rubber industry. They can deliver this article in any desired shade, either absolutely free of



CHEMICAL PLANT OF E. DE HAEN.

free sulphur or with any desired percentage of free sulphur up to 50 per cent. and there is, moreover, the absolute guarantee that they will always deliver the same quality and color as they have first delivered.

E. De Haen will always make a special analysis of any sample which may be sent by their American agents. They have appointed as their American agents Messrs. Pfaltz & Bauer, 300 Pearl street, this city, who will at any time quote prices and send samples and who will also carry a stock.

NEW HAMBURG RUBBER SUBSTITUTE.

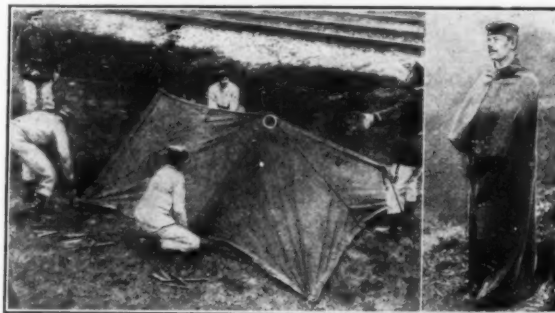
UNDER the style of Elastozen G. m. b. H., a limited company has been incorporated at Hamburg to manufacture a rubber substitute under the patent of H. Knoll.

PROWODNIK CO. PUSHING AUSTRIAN TRADE

WITH a view of marketing the products of the Prowodnik Company, of Riga, the Russische Gummiwaren-Import Actien-Gesellschaft (Russian Rubber Goods Import Co.), has been established at Vienna.

A COAT BY DAY, A TENT BY NIGHT.

Clever people the Germans. Here is an ingenious device of theirs that considerably lightens the burdens of the infantryman. They have devised a rubber coat which when taken off at night



COATS MADE INTO A TENT.

RUBBER COAT.

and buttoned into a few other coats can be converted into a tent that adequately covers as many men as have contributed to it.

Here is a cut taken from a photographic reproduction in "Popular Mechanics," which shows on one side a soldier in his rubber coat and on the other side the combined coats being formed into a tent.

GERMAN RULES FOR SORTING AND PAIRING RUBBER SHOES.

According to the *Gummi-Zeitung*, many complaints are heard in Germany as to rubber shoes not matching, this complaint being due to want of care in sorting and pairing. It is a mistaken policy, it is added, to allow such an occurrence, as nothing is a better advertisement for a factory than for its shoes to be carefully assorted in description, size, quality, shape, color, etc.

Particular attention should be paid to uniformity of height of the back, front and sides in each shoe of a pair. A good eye and some experience are needed for this work. Each single pair should be fastened together, either with string or press-buttons, or even with clips. Thus, it is remarked, the overseer responsible for the supervision of this branch of manufacture should not lose sight of the shoes after vulcanizing, but should keep strict watch on them until they are packed.

For the purpose in view, the following course is suggested:

1. After leaving the last the shoes to be sorted by quality into "firsts" and "seconds."
2. Every shoe ought to be examined separately for manufacturing or other defects.
3. Shapes, widths and numbers to be sorted.
4. The various marks to be correctly stamped.
5. The separate pairs to be grouped right and left, according to numbers.
6. The fastening together of the separate pairs.

The shoes are then ready to be sent to the packing room. By the observance of these rules it is claimed that quick and satisfactory service will result.

THE ITEM WHICH APPEARED among the trade notes in the November issue of this publication—which, coming from a European correspondent, seemed to be well substantiated—which stated that it was rumored that the United States Rubber Reclaiming Works contemplated erecting a reclaiming plant in St. Petersburg, was an error, as it is stated by that company that no such enterprise is in contemplation.

The Rubber Industry of Japan.

(By our Special Correspondent.)

AMONGST the most progressive of modern industries is the manufacture of rubber in Japan; the Japanese factories in that line developing their plans year by year. This fact is clearly illustrated by the following comparison of the aggregate crude rubber and gutta percha imports at two stages:

Fiscal year.	Kin.	Pounds.	Yen.	Equaling
1905	547,377	729,838	845,950	\$422,975
1910	1,193,146	1,590,891	3,042,396	1,521,198

It will thus be seen that Japan imported during the first half of the fiscal year 1910 more rubber than had been received during the whole of 1905. As shown elsewhere, the most recent statistics indicate the continued progress of this increase.

Japanese economic authorities speak with marked commendation of the rubber industry, for such a development of its industrial resources. The importation and resulting consumption of crude rubber is an unfailing indication of growth, much more reliable than the returns of horsepower employed. These figures, it has been asserted, are kept as low as possible, with a view to avoiding the burden of the taxes levied under that head.

INCIDENCE OF NEW JAPANESE TARIFF.

In view of the changes in the Japanese tariff, which went into effect July 17 and which were dealt with by THE INDIA RUBBER WORLD in August, 1911 (page 454), interest attaches to comparative returns for June and August of the imports by that country of rubber and its manufactures.

Crude rubber and gutta percha still entering Japan free of duty, the figures show a consequent healthy increase, the 147,263 pounds in June, value \$102,961, having risen in August to 167,032 pounds, value \$129,595. This development is attributed to the encouragement the new tariff affords to Japanese industry.

Among dutiable goods the following results are shown:

FOR FURTHER USE IN MANUFACTURING.

	June, pounds.	August, pounds.	June, dollars.	August, dollars.
Plates and sheets, hard rubber...	33,832	3,553	32,500	2,520
Tubes and rods, hard rubber...	21,295	519	19,359	1,117
All other.....	67,959	42,708	16,391	14,249
	123,086	46,780	68,250	17,886

MECHANICAL.

Engine packings.	58,507	46,653	11,112	11,245
Hose and machine beltings	6,500	4,045	7,776	1,643
	65,007	50,698	18,888	12,888

INSULATED WIRE, ETC.

Submarine and underground cables	1,068,280	3,111	39,004	231
All others.....	1,939,220	198,831	276,933	22,827
	3,007,500	201,942	315,937	23,058

APPAREL, ETC.

Rubber boots....	480 pairs	.....	353	.....
Rubber overshoes	5,384 pairs	.....	2,367	.....
Elastic boot web-bings	7,582 sq. yds.	3,808 sq. yds.	17,144	7,519
Waterproof cloth	6,511 sq. yds.	2,109 sq. yds.	3,292	1,782
Elastic bands and cuds	not shown	not shown	3,566	469
Air pillows	8,880	843	4,686	508
	not shown	not shown	\$31,408	\$10,278

SUMMARY.

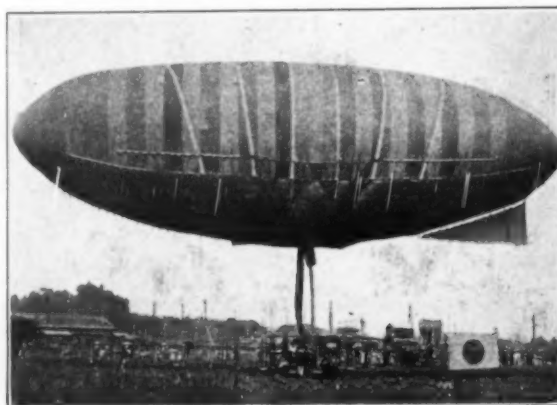
	June, 1911, dollars.	August, 1911, dollars.
For further use in manufacturing...	68,250	17,886
Mechanical	18,888	12,888
Insulated wire, etc.....	315,937	23,058
Apparel, etc.....	31,408	10,278

Aggregate \$434,483 (June, 1911) \$64,110 (August, 1911)

That in some items the reduction has not been even greater, is doubtless owing to the fear of deterioration through protracted storage, having prevented the ante-tariff importations from covering all the prospective requirements of the near future. The total absence of imports during August of rubber boots and shoes is the most striking illustration of the prospective effects to be anticipated from the new tariff when in more complete operation.

MR. ISABURO YAMADA'S AIRSHIP.

For days and weeks past "Yamada's airship" sailed for two or three miles over the country in the neighborhood of Tokyo, at a height of 700 or 1,000 feet.



PREPARING TO SAIL YAMADA'S AIRSHIP, No. 3, AT OSAKI, ONE MILE FROM TOKYO.

A very enthusiastic and practical aviator is Mr. Isaburo Yamada, who is a member of the family of Mr. S. Yamada, editor of the "Gomu Shimpō," the Japanese rubber organ. His first plans for an airship were drawn as early as 1896, and after six years' study, he accomplished in 1902 the construction of a relatively successful model. Further improving it, he finally achieved such a degree of perfection as to warrant its being adopted by

the military authorities of Japan, as the first Japanese airship. In 1905, it was used during the Russo-Japanese war for the purpose of looking down upon the fortifications of Port Arthur.

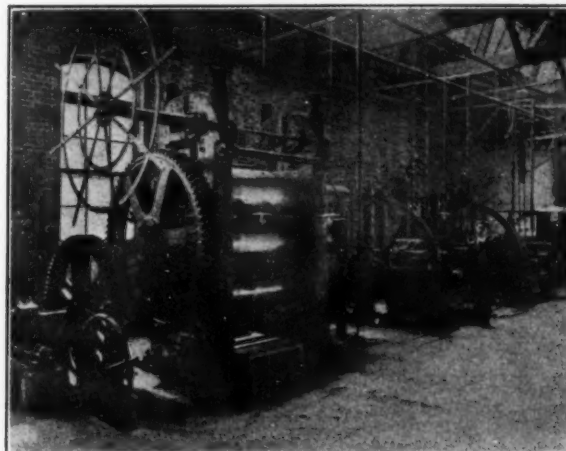
Subsequently taking up for his own account the construction of airships, he turned out No. 1 in the summer of 1910, afterwards

NIPPON ELECTRIC WIRE AND CABLE CO., LTD.

The Japanese insulated wire and cable companies now number five—The Yokohama Insulated Wire Works, a joint stock company with a capital of \$600,000. The Nippon Electric Wire and Cable Co., a joint stock company, with a capital of \$500,000; The



NIPPON ELECTRIC WIRE AND CABLE CO.



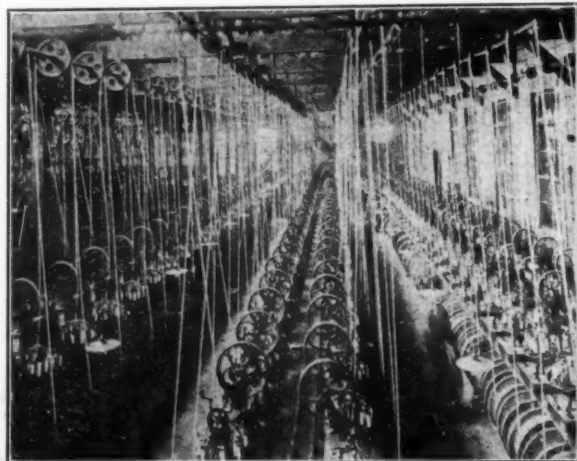
CALENDER AND MIXING ROLLER.

devoting his attention to No. 2, which was completed by spring, 1911; its anticipated flight being, however, delayed by bad weather until May. No. 3 was ready by the middle of July, 1911.

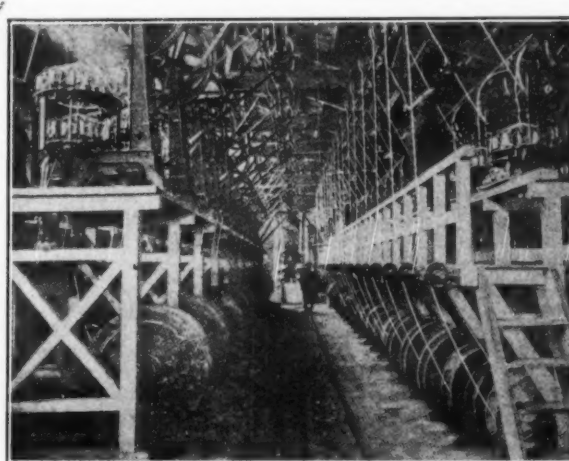
The fabric of silk and rubber used in these airships, is made by Mr. Yamada himself; being composed of Habutai (a kind of silk cloth covered with a thin coating of rubber). Great resistance to heat and absence of weight is claimed for this material, which the inventor is proud to have originated.

Nor has this new cloth been kept in the background. It occupied a prominent place at the recent International Rubber Ex-

Fujikura Cable Works, a joint stock company, with a capital of \$500,000; The Sumitomo Electric Wire Department in Osaka; The Tsuda Co., a limited partnership with a capital of \$10,000 in Kyoto—these factories yearly manufacture insulated wires and cables (except submarine and underground), valued at \$5,000,000. The value of imported submarine and underground cables and all other wires and cables is about \$1,700,000. The Nippon Electric Wire and Cable Co. manufactures one-fourth of the estimated Japanese production. This company was established at Terashima, Minami-Kazushika-gun, Tokyo, March, 1907, pur-



SMALL BRAIDING MACHINES.



LARGE BRAIDING MACHINES.

hibition in London, when two ten yard lengths were displayed by the maker, as illustrating the products of his factory, No. 53 Takanawa-Kitamachi, Shiba, Tokyo, Japan. This co-operation of the Far East was noted with much interest by European aviators.

The photograph reproduced shows the preparations for sailing one of the airships.

chasing Mr. T. Komori's electric wire works at the same place. In June, 1910, after passing through financial and technical difficulties, the Furukawa Mining Co. came to its assistance, and Mr. J. Oga took the post of managing director; Mr. T. Komori became manager, and Mr. S. Soki, from Yokohama Insulated Wire Co., became sales agent, Mr. S. Kurozawa becoming engineer-in-charge. It is said now that Mr. S. Kurozawa has im-

proved all of the processes, so that the plant is very complete. He studied under the direction of Mr. M. Wachter, an engineer at the Yokohama Insulated Wire Works, and, being possessed of much mechanical ability, is accounted one of the best equipped works managers in Japan. The product of the factory today embraces lighting and power cables, insulated wire, rubber and weatherproof, lead-covered and armored cables, etc.

The factory is exceedingly well situated on the Sumida River, the grounds being about three acres in extent. It is on the railroad, and an electric line also runs close to the factory. The motive power is steam. The boilers are Dutch, of the Alban water tube

BRITISH RUBBER FACTORIES IN JAPAN.

In considering the incidence of the new Japanese tariff, it should be remembered that out of the total Japanese receipts of crude rubber in 1910, about 1½ million pounds, one-third was imported through Kobe, principally by the two British firms located near that point (Ingram Rubber Co., at Shirike, Hyogo, and Dunlop Rubber Co., at Wakinohama). The object of these concerns erecting branch factories in Japan, was to produce manufactures of rubber within that country, out of materials from England and the colonies, and under the sole direction of Englishmen. These arrangements have, resulted in conjunction with



S. KUROZAWA,
[Nippon Electric Wire and Cable Co., Ltd.]



S. YAMADA,
[Editor of the "Gomu Shimpo."]

type, the engine (compound) making 150 revolutions a minute. The washers, mixers and calenders, as illustrated, were built by Krupp & Co., Germany. The tubing machines came from Germany and the United States. The 500 braiders are from the New England Butt Co. The testing apparatus came from Eliot & Bros., England, the saturating tanks from America, the measuring machines from Austria. About 500 hands are employed, 300 men and 200 women. The copper wire used is drawn for the company by the Furukawa Mining Co. The customers of the company are the war, navy and railroad departments of Japan, and electric companies in both Japan and China.

the new Japanese tariff, in various articles being now made in that country, which had formerly been imported.

Another cause of the augmented importation of crude rubber is said to be the increased demand for the tire industry. Many a steel tire has been replaced by a rubber one, this having recently been specially the case with the "Jinriksha." This last-named fashion has apparently come to stay.

Kobe seems to have received a large proportion of the recently increased Japanese imports of crude rubber, which fact clearly indicates the participation in that movement of the two English firms to which reference has been made.

RUBBER HEELS IN ITALY.

There is a very active market in Florence, Italy, for rubber heels, and the demand seems to be steadily increasing. The stone pavements and the stone or tiled floors in practically all houses, make their use almost a necessity. In attaching the rubber heels to shoes it is not customary to prepare the heel in any way. The cheap disc style of heel pad is fastened to the shoe by a screw. The heel-shaped pads are nailed but not glued to the heel. These two types of heel are on sale in every shoe and repair shop, and are also sold largely on the street by pushcart men. The disc type varies in size from ¾ inch to 1¼ inch, and in retail price from 10 to 30 cents per pair. These pads are of French, German and Italian manufacture. They are of cheap material and are quickly worn out and easily detached. The heel-shaped type retails at 17 to 31 cents per pair, and is generally a German or English product.

RUBBER INSULATION AND FUNGUS GROWTH.

German electricians have been discussing the problem of avoiding fungus growth on rubber insulation. This growth takes place sometimes even when the insulated wires are enclosed in a conduit of enamelled iron. The fungus growth, which destroys the insulation, is promoted by iron rust, which, with the consequent fungus growth are impossible except where there is some moisture. The remedy therefore is to insure the dryness of the tube interior by blowing hot air through it, and then all future possibility of dampness must be prevented. If it is impossible under the circumstances to keep the inside of the tube dry, a good quality of red lead paint is the best preventive of damp and fungi.

A book for rubber planters—Mr. Pearson's "What I Saw in the Tropics."

Some Notes on Rubber Planting.

ENGLISH INVESTORS CRITICIZE AMERICANS.

AT a meeting of the shareholders of the United Malaysian Rubber Co., Ltd., held November 19, in London, a resolution was passed asking the American vendors to refund a million out of the million six hundred thousand shares paid to them on the formation of the company.

The company was formed in 1910 by the Malaysian Rubber Co. of America, which company was incorporated June 18, 1909, under the laws of New Jersey, with \$3,000,000 capital authorized, with John L. Elliot, of No. 71 Broadway, New York, as president, and a board of directors that included Messrs. Cornelius Vanderbilt and Robert Goelet, also of New York. The new town established by the company in Borneo was called "Goebilt," derived from the names of these two directors.

When the London company was formed, a great deal of stress was laid by the promoters on the fact that Messrs. Vanderbilt and Goelet were interested in the enterprise. Large and immediate profits were promised, amounting to \$800,000 for the first year, but the first year and a half are said to have shown a loss of over \$200,000.

Messrs. Vanderbilt and Goelet disclaim any responsibility for the use of their names in encouraging the English investor. They appear to have gone into this enterprise on the same footing as other investors, on the strength of the very favorable outlook pictured to them by the promoters of the enterprise.

FEDERATED MALAY STATES RUBBER CO., LTD.

According to the report of the Belgian company, registered at Antwerp under above title, the production of rubber for the business year ending May 31 last was 453,806 pounds, as compared with 293,066 pounds for the preceding annual period. This result, while qualified as being very satisfactory, is about eight per cent. below the estimate which had been found of the output.

For the quantity sold during the period under review, the average price realized equalled about \$1.27, after deducting loss in weight and selling expenses; the stock on hand May 31 having since been realized at a price in excess of the valuations made at that time. Estimates of the production for the current year place the quantity at 700,000 pounds, this increase being apparently largely due to the number of trees approaching the productive stage.

With the object of discharging liabilities incurred through the acquisition of further properties, as well as of providing for the requirements of the company's holdings (now representing 4,150 acres), it is proposed to issue preference shares to an extent of equal to \$400,000.

SEAPORT (SELANGOR) RUBBER ESTATE, LIMITED.

(FEDERATED MALAY STATES), June 1910, 2,000 acres, of which 1,046 planted (chiefly in 1906). Output for twelve months to end of June, 1911, 17,717 pounds. Estimate for year ending June 30, 1912, 115,000 pounds.

STRAITS PLANTATIONS, LIMITED.

According to the report presented at the twelfth annual general meeting of the above company, there are now 1,623 acres planted with about 78,000 trees, two-thirds of which have reached the bearing stage. The labor force has been more than doubled since June, 1910.

TANDJONG RUBBER COMPANY, LIMITED.

(SUMATRA). Registered March, 1907, 8,071 acres, of which planted 3,521 acres, chiefly in 1908. Crop for 1911-12 is estimated at 30,000 pounds. Necessary machinery for preparation of rubber has been installed. Growth has been excellent, notwithstanding the drought of the early part of the year. No serious disease has been manifested.

NORTH LABIS (JOKORE) RUBBER & PRODUCE COMPANY, LIMITED.

The first annual report of this company (registered in April, 1910), shows that by the end of the current year about 1,240 acres will have been planted, out of a total area of 5,033 acres. The company has been pursuing a conservative policy, wishing to be perfectly satisfied that the planted area will be properly kept up, before proceeding with further extensions.

SCOTTISH MALAY RUBBER COMPANY, LIMITED.

FEDERATED MALAY STATES, February, 1906, 2,455 acres, of which 1,577 planted. Crop for ten months ending October 31, 1911, 70,851 pounds. Same period last year, 22,351 pounds.

EXPORTS FROM FRENCH WEST AFRICA.

Exports of rubber from French West Africa for 1910 amounted to 4,637 tons, valued at \$7,106,532. Since 1910 there appears to have been a steady decrease in exports and the decline in price has naturally affected the grades from all the colonies, especially those from Senegal and French Guinea. A report comments on the heavy adulteration of rubber in Guinea as follows: "Unfortunately rubber produced in French Guinea suffered a shrinkage in price in the world's market as a result of too frequent adulteration by the producers. To remedy this fault a Government decree was issued forbidding the sale and circulation of rubber other than in slabs or thin thongs."

RUBBER GROWERS' ASSOCIATION.

According to the third annual report of the Rubber Growers' Association, the membership at present numbers 302, there having been 138 new members enrolled since the last annual meeting. While the work of the association has chiefly been in connection with rubber production in the Federated Malay States and Ceylon, cultivation has been proceeding in other countries, where there would be in due course an opening for the machinery of the association. An independent section was recently formed, dealing with Borneo, similar arrangements being in progress as to Sumatra.

In connection with the Brussels International Exhibition, the association showed a collection of samples and photographs, the exhibit being awarded a Grand Prix diploma. Dealing with the co-operation of the association in the promotion of the late International Rubber Exhibition (in respect to prizes and other matters of importance), the opinion is expressed that exhibitions are of benefit to the rubber planting industry. The action of the association on the questions of a research chemist for Ceylon and of the Malaya research fund are duly recorded. The association is evidently doing good work in the extensive field which it covers.

NEW MEXICAN ARRANGEMENTS OF GUAYULE RUBBER CO.

According to the annual report of the Guayule Rubber Co. to March 31, 1911, it had been found necessary, in order to comply with Mexican legal requirements, to have a subsidiary company in that country. This requirement had been fulfilled by acquiring the whole share capital of the Compania Exploradora de Caucho Mexicano.

It is of interest to note that notwithstanding the internal disturbances, the output has been more than maintained, having amounted to 2,304,371 pounds for the last business year, against 2,205,509 pounds for the preceding annual period; while the operations of the Mexican company resulted in an average profit equaling 16 cents per pound. The average cost of production and distribution for 1910-11 equalled 52 cents per pound of rubber produced, as compared with 32 cents for 1909-10. The total dividend paid amounts to 15 per cent.

RUBBER AND BALATA IN BRITISH GUIANA.

(By Our Special Correspondent.)

ON October 12, Professor Harrison, Director of Science and Agriculture, and members of the Board of Agriculture, paid a visit of inspection to the experimental fields in the Botanic Gardens, Georgetown. The most interesting part of the whole inspection (probably because of its novelty to the majority of the party), was the demonstration of the germination of Pará rubber seeds at different stages. Fifty-four thousand seeds had arrived from Singapore that morning, packed in tin boxes in charcoal, in 5 per cent. of water. The boxes were sewn in canvas and the professor pointed out sundry lids, which had



DAVID YOUNG RUBBER ESTATE (BRITISH GUIANA), LIMITED.

simply been slipped on—not soldered; the latter expedient being likely to make the seeds get lost and rot. After being taken from the boxes, the seeds were placed close together in carefully prepared beds, composed of coconut fiber, charcoal and other light stuffs. A few of the seeds had already started germination.

Another stage in the process of cultivation was then shown, the seeds, which had arrived a fortnight previously, having sprouted. Those which came from Singapore gave an exceptionally good germination—between 70 and 80 per cent.; but those from Ceylon showed a miserably poor return—about 5 per cent. out of the 29,000 planted.

In the nursery, on highly manured beds, *Hevea Brasiliensis* and *Manihot Glaziovii* were making poor progress, the soil being too heavy and too rich. The *Sapium Jenmani* variety, however, was doing rather better. *Robusta* coffee, which is very popular in Java, where it is interplanted with rubber, was making excellent progress.

Heavy rice fields extending back of the gardens, besides rubber trees of several varieties, were also inspected. Originally the varieties planted were *Hevea Brasiliensis*, *Manihot Glaziovii*, *Sapium Jenmani*, *Ficus elastica* and *Castilloa elastica*. The two last-named varieties had died away to unfavorable conditions, and the other varieties had had but a precarious existence. The oldest *Hevea* was planted in December, 1907, but the soil being heavy, it had not made satisfactory progress. The tree was in the flowering stage. To overcome the soil-weight difficulty in *Heveas*, an experiment is being tried in the field—vertical forking. Only a few of the *Manihot* variety had survived, and a five-year-old *Sapium* was disappointing.

Messrs. Boyle & Co. have received from their balata grants in the interior, from September 25 to October 21, 86,829 pounds of balata, on which they have paid royalty amounting to \$1,736.58.

Mr. W. J. Smyth, manager of Demarara Rubber Co., Limited, has despatched a balata prospecting expedition of 23 men, under a well-known bushman, to the company's points out at Rema and Quitaro rivers, where the grants are reported to be very rich.

Work among David Young Estates, Limited, the pioneer rubber plantation in the colony, has been shut down. The reason given for the collapse of the company's shares is that a certain English syndicate (which held three-fifths of the shares) has "come a cropper," with the result that no working capital is available. It is stated, however, on good authority, that a new company is being formed in London, to take over the property and provide abundant working capital. Present prospecting work on the concessions around the plantation, has revealed the existence of a large quantity of indigenous *Sapium Jenmani* rubber trees. So far, the yield from the cultivated *Sapiums* which have been tapped has proved disappointing. The *Hevea Brasiliensis* trees have made splendid progress.

One of the problems which confront those who cultivate *Hevea Brasiliensis* in the colony is the possible danger of the cross fertilization of Pará rubber trees with local native *Heveas*. Such hybridization would become apparent in the second generation, i. e., seed from hybrids, which might appear for practical purposes. *Brasiliensis*, might and probably would give seeds producing hybrids of *confusa*, and *Brasiliensis*. The planter, therefore, should destroy every tree of indigenous *Hevea* varieties which may be found growing on any land to be planted with Pará rubber. This is the view, I understand, of the Department of Science and Agriculture.

At a meeting of the Board of Agriculture, Georgetown, on October 24, Professor Harrison, Director of Science and Agriculture, gave an official report of experiments, which his department had been carrying on for the past few years, with indigenous *Sapium Jenmani* rubber trees of the colony.

The experiments included five tapping periods, which showed following results:

1. September, 1908.....	8.33 oz. per tree.
2. October, 1909.....	5.16 " " "
3. March, 1910.....	1.89 " " "
4. August, 1910.....	1.93 " " "
5. November, 1910.....	1.08 " " "

Thus during a period of two years the yield of dry rubber from mature *Sapium Jenmani* trees of various sizes, from 30 to 92 inches in girth, at 3 feet from the ground (the majority being between 40 and 70 inches in circumference), was 18.39 oz. per tree.

Six trees, which had been practically run dry by previous tapplings, were selected during the 1910 trials, for the purpose of further experiment, when a diminished yield was obtained. The repeated tapping of *Sapium* trees had resulted in the gradual deterioration of quality; the rubber yielded on the first tapping being of excellent quality, while in subsequent tapplings it became more and more sticky, until the latex failed to coagulate at all. The proportion of rubber in the latex varied from about 18 per cent. in 1908, to 15 per cent. in 1910 for trees tapped for the first time; while that yielded by trees which had been subjected to tapping during the several periods contained about 11 per cent. Other interesting points of detail were likewise brought forward by Professor Harrison.

SEVERAL losses through accidental causes have lately been incurred by balata companies. These include the loss of 5,000 lbs. by M. Bugle & Co., owing to a boat disaster at Waraputa Falls, and more recently that of 1,300 lbs. belonging to the Consolidated Rubber and Balata Estates, Ltd., which were sunk in the Corentyne River.

The Obituary Record.

AUGUSTE D. SCHLESINGER, who died at his home at College Point, New York, Tuesday evening, October 31, 1911, was born at Lausanne, Switzerland, December 25, 1828. When seven years of age, his father's family moved to Hamburg, Germany, where he attended school for six years, and then learned cabinet making. In 1846 he came to America, settling in Naugatuck, Connecticut, in 1847, where he was connected with the Goodyear's Metallic Rubber Shoe Company.

In 1856 he was offered a position with the Beacon Dam Company at Beacon Falls, Conn., where the manufacture of hard rubber was being developed; his knowledge of the German and French languages was of great value to him here, since many of the employes spoke no English. In 1858 Conrad Poppenhusen, owner of the Enterprise Works at College Point, bought out the Beacon Dam Company. Mr. Schlesinger retained his connection with the firm, being made its superintendent in 1859, when the name was changed to the American Hard Rubber Company. In 1860 all machinery was moved from Beacon Falls to College Point under Mr. Schlesinger's direction, many of the employes moving with the plant, and the concern was known as Poppenhusen & Koenig until 1867, when the name The India Rubber Comb Company was adopted, with Mr. Schlesinger as superintendent. When this company was joined by the Butler Hard Rubber Company and the Goodrich Hard Rubber Company in 1898, under the name of The American Hard Rubber Company, he was appointed general superintendent, serving until January, 1905, when he retired because of failing health.

Mr. Schlesinger was active in public matters concerning the former village of College Point, being one of the incorporators of the village, serving as a trustee for eighteen years, and as village treasurer for twelve years.

When the Poppenhusen Institute was founded in 1868, he was a corporate member of the Board of Control, remaining a member until 1906, when his health compelled him to decline re-appointment. He also was treasurer of the board from 1878 to 1904.

He was an incorporator of the College Point Savings Bank in 1873, and a trustee up to the time of his death; also a trustee of the Flushing Cemetery Association from 1883 to 1905, and its president from 1896 to 1905.

In 1853 Mr. Schlesinger married Miss Jerusha Clark Pitkin of East Hartford, Conn.; Mrs. Schlesinger died in 1906. A son, Alfred H., and four daughters survive him. The funeral services were held in his home on the morning of November 3, the Rev. Mr. Dangremond officiating. The interment took place in Flushing, L. I.

The factory of the American Hard Rubber Company, in College Point, was closed during the funeral services of Mr. Schlesinger and many of the older employes were among those who gathered in his honor.

Mr. Schlesinger was in every way an exceedingly strong man, physically and mentally. Years ago, when College Point was but a village and the rubber works the only industry, the men

gloried in the fact that at their outings "the boss," when he could be induced to compete, outclassed them all in feats of strength and endurance. He was a strict but kindly disciplinarian, and the old employes, who still hold his memory in loving reverence, are wont to say, "He was a just man." A linguist, a scholar, and a practical man of affairs, he was for many years not only the head of the great factory at College Point, but one of the fathers of the town, the counselor of its dwellers, the helper of the poor. Always possessed of a manly dignity, he leaned toward the stateliness of the "old school" rather than the informality of the present. For nearly twenty years unable to walk alone, a prisoner in his spacious home, he was indomitably cheerful, mentally alert and undaunted.

As showing the thoroughness with which Mr. Schlesinger did

everything, an experience when he was in Naugatuck is most illuminating. He had hired a traveling steeplejack to re-attach the lightning rod at the top of the great chimney of the old red mill, which had been torn away by the wind. His orders were that holes should be bored into the iron chimney-top, and that they should be counter-sunk and threaded, that the bolts might hold. The man put up his ladders, found them too short, and lashed a light ladder to the top. He then went up and in a short time returned, saying that the work was done. It did not seem that it was possible to have it well done in so short a time; so Mr. Schlesinger started up the ladder himself to examine the work. Just as he got to the light ladder, which clung so closely to the wall that there was barely room for his toes to hold on the rounds, the steeplejack came running behind up the ladder, climbed past him, and sitting astride the top of the chimney, proved that every part of the work was done according to orders. Then Mr. Schlesinger climbed down, and

added—in telling the tale—"I never was so glad of anything in my life as when I again felt the solid ground beneath my feet."

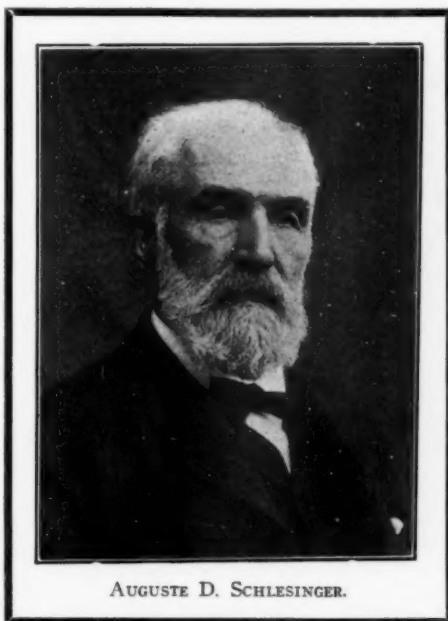
TRIBUTE OF THE RUBBER CLUB OF AMERICA.

It is with deep sorrow that we learn of the death of our Honorary Member, Auguste D. Schlesinger. A contemporary of Goodyear, a pioneer in rubber manufacture, and one whose knowledge was exact and comprehensive, the industrial world suffers a great loss in his passing. Sturdy, upright, wise, genuine, a rare counsellor, a loyal friend, full of pride in the great industry of which he was one of the founders, his loss is deeply felt. It is, therefore,

RESOLVED That in his death the Rubber Club of America and the rubber business at large have suffered an irreparable loss.

RESOLVED That we extend to his family our appreciation of his noble character, and our sympathy for them in their great bereavement.

HENRY C. PEARSON,
ELSTON E. WADBROOK,
GEO. P. WHITMORE.
Committee on Resolutions.



AUGUSTE D. SCHLESINGER.

EDWARD J. McCORMICK.

Edward J. McCormick, president of the E. J. McCormick Rubber Co., of New York, died October 29 at his home, No. 89 Keap street, Brooklyn, New York. He was born in Great Barrington, Massachusetts, 56 years ago and had lived in the eastern district of Brooklyn for many years.

Mr. McCormick's first business connection was with the late Eugene Doherty, of Brooklyn, with whom he was associated nearly twenty years. For a short time he was with the Boston Rubber Co., and later went to Germany, where he made the acquaintance of the late Dr. Heinrich Traun, of Hamburg, under whose patronage on his return to the United States he established the dental rubber business conducted under the name of Excelsior Rubber Works, now known as the Traun Rubber Co. Mr. McCormick's connection with the Mattson Rubber Co. commenced January 1, 1890, the business then established being known as the Imperial Rubber Works and incorporated under the present name of the E. J. McCormick Rubber Co. on January 23, 1911.

He belonged to Washington Council, K. of C.; St. Vincent de Paul Council, C. B. L.; the Friendly Sons of St. Patrick and the Church of the Transfiguration, where a requiem mass was said. The interment took place in Holy Cross Cemetery.

JOHN M. BRENNAN.

John M. Brennan, for a number of years foreman of the American Rubber Co., died recently at his home in Cambridge, Massachusetts. He was born in Ireland 80 years ago, but came to America when a young man. He was a veteran of the Civil War and a member of William H. Smart Post, 30, G. A. R. The funeral took place in St. Patrick's Church, Cambridge, and the burial in Malden, Massachusetts.

CLARENCE A. HAYWARD.

Clarence A. Hayward, one of the best-known rubber men in Rhode Island and the organizer of the Goodyear Rubber Co., Providence, died at his home, 273 Massachusetts avenue, Sunday, November 19, after an illness dating back more than a year. He was 60 years old.

Mr. Hayward was a sufferer from Bright's disease, but it was not until within the last few months that his condition became serious. He was able to be about until a short time ago and was confined to his bed only a few days.

He was born in Boston in 1852 and came to Providence in 1881. He engaged in the rubber business and opened a store on North Main street, which he conducted successfully for several years. The business expanded to such an extent that he formed a co-partnership with his brother, J. Francis Hayward, under the firm name of the Goodyear Rubber Co. This business continued for a long time and eventually became the Hope Rubber Co., one of the largest retail concerns in Providence.

In 1887 Mr. Hayward severed his connection with the Goodyear Rubber Co. and again started in business for himself. He opened a store in the Conrad Building, Providence, under the firm name of the Hayward Rubber Co., which he conducted for several years. He also had stores in Pawtucket, R. I., and Taunton, Mass., under the same firm name.

In 1880 he married Clara E. Stearns. She died in 1902. One son, Albert S. Hayward, and a daughter, Clara A., survive. The funeral was held Wednesday, November 22, at 2 o'clock, with services at the Woodbury Memorial Church, Providence.

Mrs. Abby Freeborn Piper, mother of Walter E. Piper, superintendent of the Boston Rubber Shoe Co., died quite suddenly on October 30 while visiting relatives in her native town of Warren, Rhode Island. Services were held at the home of her son at the Fells, Melrose, Massachusetts. Mrs. Piper was 69 years old and had been a resident of Melrose for the past nine years.

NEW TRADE PUBLICATIONS.

THE Gutta Percha & Rubber Manufacturing Co. of Toronto, Limited, Toronto, Canada, are sending out a very artistic catalog of their sporting shoes, illustrating both styles, bal-morals and oxfords, in their different yachting, vacation, bathing and tennis shoes. These shoes are made in a variety of styles and colors. They are made of white duck with white rubber, tan duck and tan rubber, green duck and green rubber, white duck and black rubber and various other combinations in color effects. A net price list insert accompanies the catalog.

Beacon Falls Rubber Shoe Co., Beacon Falls, Connecticut, sends out regularly its little monthly publication called "R-u-b-b-e-r." It contains some pages of display advertising and a few pages of readable text.

The United States Tire Co., New York, has circulated a little booklet, vest pocket size, entitled "The Tale of a Tortured Tire," which contains a short allegory in which the improperly inflated tire soliloquizes on its unhappy fate and its untimely blowout. It is designed to give the users of tires a better idea of how to use them.

The Hood Rubber Co. (Boston, Massachusetts) has recently issued a booklet entitled "What He Knows About Her Rubbers." It tells in narrative form the story of the manufacture of a rubber shoe from calabash to the carton. The story is a fairly familiar one, but the setting in this instance is somewhat out of the ordinary—the scene being laid at an afternoon tea. One of the guests about to depart assures her hostess that the rain outside has no terrors for her as she is shod in an excellent pair of rubbers. That introduces the subject. After a brief discussion they appeal to the lone man present and ask him if he can tell them anything about rubbers. Fortunately he is able to do so, having observed the gathering of rubber milk in the Brazilian forest and being familiar with all the factory processes. He gives them the story—with great discreetness not making it too prolix. The little book has a number of illustrations.

The B. F. Goodrich Co. (Akron, Ohio) has just issued a 16-page pamphlet, printed on heavy paper of a fine quality, calling attention especially to its solid tires made for brewers' trucks. The pamphlet has a front cover design of a handsome stein and is labeled "Prosit," the German student's equivalent for "Here's luck to you." The book illustrates the trucks of various brewing concerns equipped with the Goodrich tires and gives a few testimonials, one brewer writing that on his three-ton Packard truck his front tires traveled 15,000 miles and his rear tires 10,000 miles without getting out of order.

The Faultless Rubber Co. (Ashland, Ohio) has issued an exceedingly handsome—one might say impressive—catalog of its sundry, surgical, specialty and novelty rubber goods. The catalog is 10 x 14 inches in size, containing 46 pages, printed in red and black, on heavy paper of fine quality, with read leatherette cover stamped in gold. There was no skimping expense in the printing of this catalog. It gives a great variety of illustrations, some of them in colors, of the goods made by the company, including water bottles, all kinds of syringes, rubber gloves, rings, shields, covers, cushions, ice bags, tubes, sheeting, blankets, aprons and everything else used in surgical work—and a variety of toy balloons—which are some distance removed from surgical work. The catalog also gives prices of the various goods illustrated and many tables, and much other information.

The Luzerne Rubber Co. (Trenton, New Jersey) issues a small catalog, printed in buff and black, illustrating the company's output, including battery jars, syringes, knobs, insulators, handles, discs, pen stock and a great variety of other articles.

SEND for Index (free) to Mr. Pearson's "Crude Rubber and Compounding Ingredients."

The Editor's Book Table.

YEAR-BOOK OF THE AMERICAN ASSOCIATION OF COMMERCE and Trade in Berlin, Inc. 1911. [Paper, 8vo, 68 pp.]

THE annual report of the above association, in addition to the proceedings at the eighth annual meeting, contains a number of valuable statistical tables, showing the total foreign trade of the United States and Germany, as well as a comparison of the trading between the two countries. The table of declared exports from the various consular districts to the United States is of interest as showing the exact sources of importations. It would appear that nearly one-half of the 1910 exports were from Hamburg, Berlin, Frankfurt, Leipzig and Chemnitz. Another table of special interest shows a gain of 50 per cent. in German exports to the Philippines in 1910, as compared with 1909. During the same period German trade with Porto Rico had nearly doubled, and that with Hawaii more than trebled.

RUBBER FACTS AND FIGURES—NO. 7. BY M. S. PARRY AND E. M. MURAVUR. London: Fredk. C. Mathieson & Sons, second edition, April 1911. [Cardboard. 8vo. Pp. 202. Price, 2s. 6d., net.]

In view of the important changes taking place from time to time in the position of old rubber companies, and of the great increase in new flotations, the frequent issue of fresh editions has become a necessary supplement to any work (whether periodical or otherwise) dealing with rubber-planting companies.

The general idea of this handy volume is to facilitate comparison of the statistical returns of various companies by a classification, as nearly uniform as possible. Recognizing the preponderating importance of the Malayan States as a source of rubber, and the absence of a common basis in the cases of Java and Ceylon, the authors of the booklet institute a comparison between Malayan, Sumatra and Borneo companies. The prospective outputs and dividends up to 1918 express those points with mathematical accuracy, on the basis (it is to be inferred) of plantings now made or in immediate contemplation. As a guide to the prospective investor and to any one interested in the supply of rubber, this handbook justifies its title by the clearness and copiousness of its information.

LO STATO DEL PARÁ (BRASILE) A TORINO, 1911. TURIN. THE Turin International Exposition. [Paper. 8vo. Pp. 106.]

Combining records of the various features illustrated by the exhibits of the State of Pará at the Turin International Exposition, this booklet on the subject (issued by the Exposition authorities), in Italian, is interesting as well as instructive. Starting with an extract of the State budget, a brief but comprehensive treatise on the "Extractive Industries of the State of Pará" is lucidly illustrated by a graphic chart, showing the comparative importance of the yield of rubber as well as of other products of the State; rubber being by far the largest of them. Another chart illustrates the relative importance of the rubber shipments from that State to different markets; England and America having been practically running a neck and neck race for some years, the falling off in shipments to America in 1910 having let England get ahead. A number of interesting statistical tables lead up to a paper on the cultivation of *Hevea Brasiliensis*, with table showing the distribution of the existing plantations amongst the various municipalities of the State.

A MANUAL OF PHILIPPINE SILK CULTURE. BY CHARLES S. BANKS, Bureau of Science. Manila, 1911. [Paper. 8vo. Pp. 54 + plates.]

While the production of rubber in the Philippines has been a subject of close study by local economists and botanists, the question of silk culture has likewise received attention from sci-

entists, and notably from the Manila Bureau of Science, with which Mr. Banks is officially connected. Silk and rubber, ultimately combined, as they are, in certain manufactures, have common interests at an earlier stage; the growth of mulberry and rubber trees being alike influenced by conditions of soil, climate and temperature. Hence, as an illustration of what scientific research may ultimately do for Philippine rubber cultivation, the "Manual of Philippine Silk Culture" has more than a sectional interest.

In successive divisions Mr. Banks treats the historical and botanical aspects of the subject, as well as the life history of the silkworm. Other heads include: Wild silkworms; enemies and diseases of same; the silk house, the mulberry and the details of propagation. In conclusion, various fabrics suitable for Philippine production are touched upon. The work amply carries out its avowed object, that of collating data for the guidance of those contemplating the production of silk on a commercial basis.

SEARCHLIGHTS ON SOME AMERICAN INDUSTRIES. BY JAMES COOKE MILLS. Chicago: A. C. McClurg & Co., 1911. [Cloth, pages 299. Price, \$1.50.]

Mr. Mills has written a book full of information on a variety of industrial topics. His chapters are devoted to lumber, salt, sugar, paper, rubber, leather and one or two other subjects. He has not attempted to discuss each subject exhaustively, but rather to present the essential facts regarding each of these industries in language which the laymen can understand.

To rubber he has devoted thirty-four pages, and must be complimented on the amount of information which he has embodied in that space. He has done his work carefully and has evidently resorted to many sources of information. If he makes an occasional slip, as when he states that every ton of rubber exported from the Amazon valley costs a human life (which would amount to about 40,000 lives each year), this does not seriously impair the general accuracy of the chapter.

He treats of rubber historically, botanically and chemically. He devotes a number of pages to the enumeration of the various kinds of rubber and the localities in which they grow, and speaks of the great extent to which the planting of rubber has now been carried, estimating that in the year 1912 9,000,000 rubber trees will come into bearing in the Middle East, an estimate which is undoubtedly conservative.

He goes quite exhaustively into the subject of coagulating rubber, describing the different methods found necessary for the different kinds, from the process of curing in the smoke of palm nuts, used along the Amazon valley, to the methods employed in the coagulating of *Castilloa* latex and other varieties. His description of the guayule industry is interesting and in the main accurate. Just how long it will require to get a profitable product from the planted guayule shrub is a mooted question. He places the period at about fifteen years.

The subject of reclaimed rubber is gone into quite fully, his estimate of the amount of rubber reclaimed in a year in this country being placed at 50,000,000 pounds.

OFFICIAL REPORT OF STATE OF PARÁ FOR 1910.

In his lengthy and detailed report (just to hand) Dr. José Antonio Luiz Coelho, Secretary of the Treasury, has compiled full statistical information as to the production, imports and exports of the State of Pará. Special prominence is given to the subject of rubber. This work, replete with facts, both of general and special interest, will be fully reviewed in the next issue of THE INDIA RUBBER WORLD.

News of the American Rubber Trade.

BOSTON WOVEN HOSE AND RUBBER CO.

The Boston Woven Hose and Rubber Co. have filed with the secretary of state of Massachusetts a statement of their financial condition, as required by the statutes, for their business year ending August 31, 1911, the details of which are reproduced below, in comparison with which are given also the figures for the two preceding years:

ASSETS.			
	1909.	1910.	1911.
Patents	\$1.00	\$1.00	\$1.00
Land and buildings....	825,435.97	800,000.00	811,919.02
Machinery and tools....	562,340.97	450,000.00	414,179.78
Cash	403,168.00	96,428.24	206,317.47
Accounts receivable....	468,518.90	553,922.90	469,415.48
Office furniture	1.00	1.00	1.00
Merchandise	665,948.96	756,283.51	755,150.55
Total	\$2,925,414.80	\$2,656,636.65	\$2,656,984.30
LIABILITIES.			
	1909.	1910.	1911.
Capital stock, common..	\$750,000.00 }	\$1,515,000.00	\$1,529,500.00
Capital stock, preferred.	750,000.00 }		
Loans	455,000.00	85,000.00	
Accounts payable	47,789.20	57,902.71	50,622.72
Accrued wages	8,456.80	11,463.26	
Guarantee account....		87,270.68 }	1,076,861.58
Surplus	914,168.80	900,000.00 }	
Total	\$2,925,414.80	\$2,656,636.65	\$2,656,984.30

The directors of the Boston Woven Hose & Rubber Co. have declared a semi-annual dividend of three dollars (\$3.00) per share on the preferred stock and a quarterly dividend of two dollars and a half (\$2.50) per share on the common stock, payable December 15, 1911, to stockholders of record December 5, 1911.

STANDARD RUBBER AND CABLE CO.

At a recent meeting of the stockholders of the Standard Rubber and Cable Co., held at the office of the company in Bridgeport, Connecticut, it was voted to increase the capital stock from \$50,000 to \$250,000. The following officers were elected:

President and treasurer—William M. Doucette,
Vice-president—Peter A. Thorp,
Secretary—Alexander L. DeLaney.

It was proposed also to install further machinery and to take up in the near future the manufacture of automobile tires and tubes. The company declared a 5 per cent. dividend on the first year's business at a meeting of its directors held on October 27.

THE NEW S. M. B. RUBBER CO.

The S. M. B. Rubber Co. was organized November 22 under the laws of the state of New York, with a capital of \$150,000, for the manufacture of rubberized fabrics for the dress shield and raincoat manufacturing trade and also for the manufacture of rubber clothing. The factory will be located in Naugatuck, Connecticut. The officers of the company are as follows:

President—Arthur C. Squires, who will also act as factory manager.
Treasurer and General Sales Manager—T. F. McCarthy.
Secretary—Harry Boardman.

The name of the company, it will be noticed, is made up of the initials of these three officers. Of the \$150,000 capital, \$50,000 was subscribed by citizens of Naugatuck and \$100,000 by New York capitalists. The company hopes later to go into the manufacture of automobile tires. Mr. Squires says that there is a great abundance of business already pledged to the company. The building of the factory will proceed at once, and the officers hope to have it in running order within three months' time.

THE INTERCONTINENTAL RUBBER CO. INCREASES ITS DIRECTORS.

The board of directors of the Intercontinental Rubber Co. has been increased from twelve to fourteen, and William C. Potter, formerly general representative in Mexico of the American Smelting and Refining Company, and William F. Sheehan, have been elected to the directorate. Mr. Potter has also been made president. He is the first to serve in that capacity, although the company has been organized for several years.

RUBBER RECLAIMERS' CLUB ELECTS OFFICERS.

At the annual meeting of the Rubber Reclaimers' Club, held on November 9, at the Hotel Belmont, New York, the following officers were elected for the ensuing year:

President—F. H. Appleton,
Treasurer—R. W. Seabury,
Secretary—J. A. Norman.

Incidentally at the meeting a very fine lunch was served and the occasion was greatly enjoyed by those present.

DIAMOND RUBBER CO.

On Tuesday, October 27, The Diamond Rubber Co. held its annual meeting of stockholders. The regular quarterly dividend of 3½ per cent was declared, and in addition an extra dividend of 2½ per cent. The following board of directors was elected: F. A. Hardy, A. H. Marks, W. B. Miller, A. H. Noah, O. C. Barber, R. C. Lake, Guy E. Norwood. The officers of the board of directors are as follows: F. A. Hardy, president; A. H. Marks, vice-president and general manager; W. B. Miller, secretary; A. H. Noah, treasurer, and Guy E. Norwood, assistant treasurer.

AMERICAN CHEMICAL SOCIETY OFFICERS.

Charles L. Parsons, secretary of the American Chemical Society, has distributed blank ballots to the members of that society for the nomination of candidates for president for the year 1912 and also for four councilors to serve for three years beginning January 10, 1912. The present incumbents of these offices are as follows: President, Alexander Smith; councilors, W. Lash Miller, C. H. Herty, S. W. Parr, W. H. Walker. Of these all are eligible, as no one has served the constitutional limit of two consecutive years, but President Smith insists that he cannot accept a renomination.

In the division of Chemistry of India Rubber, D. A. Cutler, of the Rubber Goods Manufacturing Co., No. 42 Broadway, New York, is chairman, and Dr. F. J. Maywald, No. 89 Pine street, New York, secretary.

THE BLUE RIBBON RUBBER CAT.

The Industrial and Educational Exposition recently held in Boston was not primarily intended for the exploitation of fancy stock, but the Foster Rubber Co. at the conclusion of the exposition received from the other exhibitors a blue ribbon bearing the inscription, "Foster Rubber Co.; Big Black Cat. Award of Merit." This was an unexpected but eminently proper recognition of the large black cat, fully as large as a man, that used to perambulate around the exposition floor every evening, blinking his huge eyes—that suspiciously resembled electric lights—at the admiring throng.

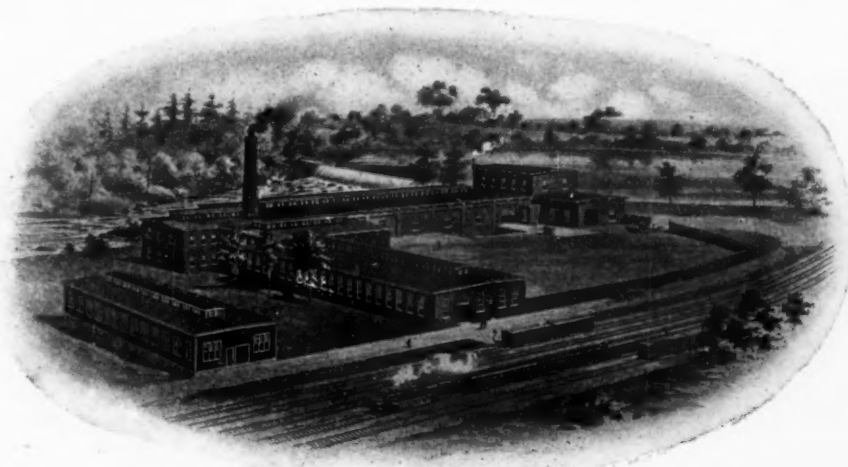
This impressive animal gained such celebrity that one of the Boston hotels borrowed him for Hallowe'en night for the purpose of having him disport himself in the various banquet rooms that were in use on that occasion. He made a great hit with the Hallowe'eners.

THE MONATIQUOT RUBBER CO.

The plant of the Monatiquot Rubber Co., at South Braintree, Massachusetts, is working up to its full capacity, in spite of the recent additions to its buildings and equipment. This mill is advantageously located twelve miles from Boston, on the Fall River branch of the New York, New Haven & Hartford Railroad. A thousand-foot siding furnishes ideal shipping and receiving facilities.

The mill stands on the left bank of the Monatiquot River, and from the falls at this point the company utilizes a water power which, in addition to its double steam equipment, gives it over 1,200 horse-power. The company generates its own electric current for lighting, etc.

The Monatiquot River plays an important part in the manufacture of "Monatiquot" and "Squantum" brands of "Naturized Rubber," since its water has been shown by analysis to be remarkably soft and pure, free from solids held in solution. In washing the rubber in process of reclamation, this water has been found to possess remarkable solvent properties, effectively breaking down and carrying off dirt and mineral substances which must be eliminated. The Monatiquot people say they find this a distinct advantage to them.



PLANT OF THE MONATIQUOT RUBBER CO.

To a visitor at this plant a number of things appear worthy of note. First, the completeness and convenient arrangement of equipment—the most approved types of rubber-working machinery—next, the modern, well-lighted concrete and brick buildings, not alone large enough for the present equipment, but with ample allowance for new machines as needed; last, the pains taken with the product in its manufacture. Thoroughness and careful attention to detail characterize every stage of the work. Years of experience and a close study of the science of rubber reclamation have borne fruit in this modern plant and its products "Monatiquot" and "Squantum" brands, "Naturized Rubber."

JAMES A. BRADEN, of the tire department of The Diamond Rubber Company (Akron, Ohio), remarks according to the Chicago "Inter-Ocean," that the motorist is mistaken who thinks tires are built solely of rubber and fabric. He has overlooked the principal material, which Mr. Braden goes on to indicate is brains. Undoubtedly he is right. Brains are a very essential ingredient in tire making, but at the same time some tire makers have been so generous in brains and so economical in rubber that the result, while psychologically interesting, has not been particularly successful in point of service.

TRADE NEWS NOTES.

The Fisk Rubber Co., Chicopee Falls, Massachusetts, resumed operations in November after a brief shutdown for the purpose of taking the annual inventory and for making some minor repairs.

The Jones Auto Exchange, on North Topeka avenue, Wichita, Kansas, has an exhibit in connection with its business that has attracted a great deal of attention. It is a rubber tree imported from South America standing 15 feet high, with a number of branches. It is described as follows: "The leaves are long and smooth and quite thick. The trunk is covered with a sort of fibrous bark and at the base are a number of tap roots above the surface of the soil in which the tree is growing, somewhat resembling a gigantic corn stalk in this particular."

It is reported that the manufacture of soling for outing shoes made of a mixture of rubber and asbestos, will soon be attempted on a fairly large scale in this country. This sort of soling has proved quite practical in England.

According to figures compiled by J. M. Gilbert, there are in the

neighborhood of 6,000 firms in the United States using motor trucks at the present time. As there are 20,000 trucks in operation, this makes an average of about three to each firm. The rapidity with which business men are discarding horses and adopting power driven vehicles in their delivery systems indicates, in Mr. Gilbert's opinion, that another year will find 50,000 trucks running.

The Goodyear Tire and Rubber Co. has remodeled its western branches, making them all uniform in furniture, fixtures, decorations and in character of illumination.

The Remington Tire and Rubber Co., Mansfield, Ohio, has been adjudicated bankrupt, and the first meeting of its creditors was held in Mansfield on November 25.

The factory of the Mercer Rubber Co. (Trenton, New Jersey), has recently been extensively improved in the way of installing new machinery. The company is well known as manufacturing all kinds of mechanical rubber goods, hose, packing, belting, moulded goods, tubing, valves and gaskets. Its product will be handled by the recently incorporated Mercer Rubber Company of Pennsylvania, located in Pittsburgh, Pennsylvania.

COLONEL COLT AND THE INDUSTRIAL TRUST CO.

Colonel Samuel P. Colt, president of the United States Rubber Co., has issued a circular for proxies to be used at the annual meeting of stockholders of the Industrial Trust Co., Providence, Rhode Island, to be held January 16 next. Colonel Colt is now chairman of the board of directors of that company and was for many years its president, giving up that position two or three years ago at a time when his health necessitated the lessening of some of his business burdens. The Industrial Trust Co. was created by Colonel Colt and reached its present highly successful condition very largely through his ability. It would seem to be only right, therefore, that he should resume control of this institution now that his health will permit him to take on these additional duties.

TRADE NEWS NOTES.

The United States Tire Co. have just placed on the market a new tire called the United States Standard Tire (Demountable). The distinguishing characteristic of this tire lies in the fact that by its use both single and dual tires can be changed without removing the wheel from the truck. This demountable feature is rendered possible by making the inside diameter of the tire band three-eighths of an inch larger than the outside band of the wheel, which gives a clearance between the tire band and the wheel band of three-sixteenths of an inch. Into this space wedges are forced, which are part of the flanges. The tire itself is built on a steel band with a layer of hard rubber between the band and the soft rubber tread.

The American Rim Co. has just opened quite extensive quarters at No. 250 West 54th street, New York, and intends to carry on an active campaign in marketing the Lambert Rim, which is claimed to have some remarkable demountable and quick-detachable features.

The Diamond Rubber Co., Akron, Ohio, has received a letter from a user of diamond tires, who says that his two front tires have passed the 7,000-mile mark and still hold the original air, which is certainly not a discreditable record.

Hood Rubber Co., Boston, Massachusetts, paid its regular quarterly dividend of $1\frac{1}{4}$ per cent. on its preferred stock on November 1.

The Jonesboro Rubber Co., whose factory is located in Jonesboro, Indiana, is said to be making preparations to resume operation, after having been shut down.

It is reported that the Banner Rubber Co., St. Louis, Missouri, has filed an application to increase its capital stock from \$100,000 to \$400,000, 3,000 shares of preferred and 1,000 shares of common stock. An officer of the company explains that the increase is to enable the company to engage in the manufacture of rubber boots and shoes and automobile tires on a larger scale.

The Bridgeport Elastic Web Co., Bridgeport, Connecticut, has filed a certificate of a change of location from Bridgeport to Mansfield, Ohio.

There are rumors, coming from sundry quarters, that a company has been formed in Paris, capitalized at \$500,000, for the purpose of manufacturing synthetic rubber from turpentine oil.

The United States Tire Co. has just issued a twenty-four-page pamphlet, very tastefully printed in colors, entitled, "Where Bicycle Tires Come From." The story is intended for juvenile readers. It begins in the Amazon jungle and describes how the trees are tapped, latex collected, coagulated, and the crude rubber shipped to this country. It then follows its course through the various factory processes, until the tires are completed and ready for the bicycle. It is generously illustrated with cuts made from photographs showing all the different stages mentioned in the story, and has a cover that will attract the eyes of the young people.

The Fisk Rubber Co., of Chicopee Falls, Massachusetts, is establishing a branch at No. 1207 Bedford avenue, Brooklyn, New York. Three other branches are being established, located as follows: No. 814 Main street, Cincinnati, Ohio; No. 5933 Baum street, Pittsburgh, Pennsylvania; No. 101 East Broadway, Butte, Montana.

The National India Rubber Co., Bristol, Rhode Island, is running on a full-time schedule, the mills being in operation for ten hours a day for the full week, with the expectation of continuing this schedule through the winter. It employs about 900 operatives.

Theodore Hofeller & Co. (Buffalo, New York), sends out a monthly calendar of convenient size and tasteful design, in the corner of which is to be found this statement, "Largest dealers in old rubber in the world."

The St. Louis branch of the Goodyear Tire and Rubber Co. has moved from its former quarters in Olive street to its new location on Locust street, near Nineteenth. The new building is finely equipped for the display and distribution of tires.

The Bundy Steam Trap, a device familiar to a large number of rubber manufacturers and favorably regarded by many, is now being handled by its manufacturers, the Nashua Machine Co., with Boston offices at No. 127 Federal street.

The Manufactured Rubber Co. declared a regular quarterly dividend of $1\frac{1}{2}$ per cent. on preferred stock, payable December 1 to stock of record November 25.

The Interstate Rubber Co., of New York City, with a factory for the manufacture of rubberized raincoats and autocoats in South Norwalk, Connecticut, has recently purchased the plant of the Robert Kerr Bros., located in Springdale, Connecticut, to be used as an additional factory.

The B. & R. (Beebe & Richardson) Rubber Co. (North Brookfield, Massachusetts), has recently installed a new 250-horsepower boiler in its factory.

It is stated that the American Tire and Rubber Co., recently incorporated in Akron, Ohio, for the purpose of manufacturing inner tubes and repair stock, will be ready for business in about a month's time.

The E. H. Clapp Rubber Co., Boston, Massachusetts, have secured for a western representative Mr. J. A. Kendall, who has offices in the Garfield building, Cleveland, Ohio. Mr. Kendall is well known in crude rubber and reclaiming lines, and both he and the company are to be congratulated on the arrangement.

The stockholders of the Miller Rubber Co., Akron, Ohio, have been called to attend a special meeting to be held on December 15, to vote on a proposed increase of the company's capital stock from \$500,000 to \$1,000,000.

PERSONAL MENTION.

Frederick T. Sloan has resigned the position which he held with the National India Rubber Co. (Bristol, Rhode Island), for which he traveled the territory of Massachusetts, Rhode Island and Connecticut, and has accepted the position of manager of the rubber department of the Phoenix-Hermetic Co. (Chicago).

Charles B. Whittelsey, of the Hartford Rubber Works Co. (Hartford, Connecticut), is a member of the truck standards division of the committee appointed by the Society of Automobile Engineers for standardizing motor truck wheels and tires.

Paul J. Valentine, chief clerk in the footwear sales departments of the Canadian Consolidated Rubber Co., Ltd., Montreal, was recently presented with a purse of gold by his fellow employees on the occasion of his approaching wedding.

Judge William H. Moore, director of the United States Rubber Co., took twenty-two blue ribbons at the horse show, held the latter part of November in New York.

AN AERONAUTIC SHOW.

The Aero Club of America is a decidedly live organization. At its annual meeting, held on November 13, in its clubhouse at 41st street and Madison avenue, New York, it was stated that a comprehensive aeronautic show would be held at the Grand Central Palace, in New York, from May 9 to 20, 1912. The club also has under consideration an aeronautic competition on a very large scale. The club has grown rapidly during the past year, the membership increasing from 320 to 540. There are now 24 clubs affiliated with it. At this meeting a new class of membership was added, for commissioned officers of the army and navy, and it was decided to increase the resident membership to 750. The initiation fee for the non-resident member was reduced from \$50 to \$25, only those residing more than fifty miles from New York being eligible to this list. The annual election of officers resulted as follows:

Allan A. Ryan declined re-election to the presidency and Robert J. Collier was elected to succeed him. Resolutions of thanks were passed, eulogizing the services of Mr. Ryan. In the other offices James A. Blair, Jr., succeeds Cortlandt Field Bishop as first vice-president, Major Samuel Reber, U. S. A., becomes second vice-president in place of Dave Hennen Morris, and Harold F. McCormick, of Chicago, succeeds Mr. Blair as third vice-president. For the office of additional vice-president Henry A. Wise-Wood was elected.

E. G. STEARNS GOES WITH BANNER RUBBER CO.

E. G. Stearns, who has been connected with the United States Rubber Co. ever since its formation, for the last two years as its Chicago agent, and before that time as manager of its Chicago branch store, has left that company to go with the Banner Rubber Co., of St. Louis. This company is to be reorganized, and Mr. Stearns, as president of the newly formed Stearns Rubber Co., Chicago, will have charge of the sales of the Banner goods. Walter F. Roth is associated with him as secretary and treasurer.

C. H. OAKLEY ACQUIRES THE ESSEX RUBBER CO.

Clifford H. Oakley, of Trenton, who for some time has owned the majority of the stock of the Essex Rubber Co., has now acquired the entire capital stock. The executive staff of the company remains unchanged and Mr. Oakley continues as president and A. E. Moon as vice-president.

Mr. Oakley has been active in the rubber manufacturing business for the past twenty years, entering the service of the Cleveland Rubber Co. as a mechanical engineer in 1892 and later became its superintendent.

For eight years Mr. Oakley was associated with the Cleveland Rubber Co. In the year 1900 he removed to Trenton becoming connected with the Grieb Rubber Co. In his seven years' association with that concern, as general manager and secretary, Mr. Oakley greatly extended the business of the company and then brought about the formation of the Ajax-Grieb Co.

Four years ago Mr. Oakley retired from the Ajax-Grieb Co. and formed the Essex Rubber Co. This concern manufactures numerous rubber articles and engineering supplies, including rubber specialties for the shoe trade, automobile accessories, sporting goods, asbestos and rubber packings, tubing, valves, horseshoe pads and the new well-known Essex rubber rug.

The business, under the personal direction of Mr. Oakley, has grown rapidly and at the present time steps are being taken toward providing more adequate facilities in the matter of both land and buildings for the company.

The November number of *The Auto Era*, published by the Winton Motor Car Co. (Cleveland, Ohio), contains, together with a great variety of interesting matter relative to motors, a paragraph on the shifting of tires, advising the occasional changing of tires from wheels on one side of a truck to the opposite wheels, so that the wear may be equalized and maximum service be secured.

PERSONAL MENTION.

Apropos of a recent New York Supreme Court decision regarding the liability of the directors of corporations, absolving them from responsibility for losses "in small every day transactions," it is interesting to note that the "Directory of Directors in the City of New York" contains the names of several United States Rubber Co. directors who are on the directorate of a large number of corporations. Among them are Colonel Samuel P. Colt, a director in 30 corporations; Francis L. Hine, a director in 26; W. H. Truesdale, a director in 33, and Lester Leland, a director in 34.

R. J. Wilkie, who has been treasurer and manager of the Wilkie Rubber Manufacturing Co., has resigned from both positions. The company has been reorganized, and in addition to the manufacture of hard rubber and moulded goods, has recently added druggists' sundries and soft rubber and rubber covered rolls.

J. S. Waddell, treasurer of the Springfield Tire & Rubber Co., Portland street, Boston, Massachusetts, started on November 6 on a long trip, covering the Pacific coast and the Hawaiian Islands, with the intention of establishing a number of agencies for the distribution of the company's output.

Mrs. Francis Burroughs Mulford, wife of Timothy Mulford, for many years manager of the Goodyear Rubber Co., Kansas City, Missouri, died recently at her home in that city of pneumonia, which followed close upon a long siege of typhoid fever. Mrs. Mulford was born in Brooklyn, New York, in 1851.

Mrs. S. D. Baldwin, wife of the treasurer and general manager of the Cincinnati Rubber Manufacturing Co., died on Sunday evening, November 19, after a very brief illness.

WORSHIPFUL MASTER W. H. PALMER.

WILLIAM H. PALMER, advertising manager of the United States Rubber Co., has been signally honored by his fellow Masons at his old home in Malden, Massachusetts. The Malden *News* of November 3 contains the following paragraph:

"Mt. Vernon Lodge of Masons elected its twenty-sixth worshipful master last night when William H. Palmer took the chair. During the past few years he has been a resident of New York City, as he holds a responsible position with the United States Rubber Co. His devotion to his lodge work, however, has never waned and he makes special trips to Malden to be present at meetings. He has served in the Common Council of Malden and had he remained here would have continued to be honored."

Which goes to show that the good don't all die young.

COMMODORE BENEDICT AGAIN TO VISIT THE AMAZON.

COMMODORE E. C. BENEDICT, equally famous in the rubber industry and in yachting circles, is reported to have planned for another trip to the Amazon. He is said to have chartered the ocean-cruising steam yacht *Alvina*, owned by Thomas F. Cole. The yacht is 214 feet over all, and the commodore will, as usual, take a party of friends with him. He expects to have with him Colgate Hoyt, James McCutcheon, a few old yachting friends and, in addition, his daughter, Mrs. Harmon, whose husband is well known in aviation circles, and two or three of her friends. He expects to sail on December 15, going to the Amazon and as far up the river as Manaos.

This will be the commodore's third cruise to those waters, his first cruise, when he took a large number of rubber men, including several connected with the United States Rubber Co., occurring about six years ago on his own yacht *Virginia*, his second cruise taking place on the same yacht last winter, when he was accompanied by James B. Ford, vice-president of the United States Rubber Co.

NEW INCORPORATIONS.

AUTOMOBILE SUNDRIES Co., November 1, 1911, under the laws of New York; authorized capital \$10,000. Incorporators: George F. Merritt, 114 East 23rd street, Theo. M. Crisp, 80 Broadway, and John E. Waltz, 21 West 106th street, all of New York. Location of principal office, New York. To manufacture rubber tires, tubes, etc.

The Buffalo Tire Co., November 10, 1911, under the laws of New York; authorized capital \$500. Incorporators: Wm. Preiss, 160 Franklin street, Chas. H. Howe, and Alfred C. Bidwell, 234 North Division street, all of Buffalo, New York. Location of principal office, Buffalo. To manufacture "Bison" tires.

Central Tire Supply Co., November 1, 1911, under the laws of New York; authorized capital \$1,100. Incorporators: Max Wolper, 1911 Madison avenue, Martin C. Powers, 24 Locust street, and Bernard Halpert, 1911 Madison avenue, all of New York City. Location of principal office, New York City. To manufacture tires, etc.

D. & S. International Airless Tire Co., October 17, 1911, under the laws of New Jersey; authorized capital \$100,000. Incorporators: J. H. Nixon, 2246 Lehigh avenue, Philadelphia, Pennsylvania. Thomas B. Hall, 423 Market street, Camden, New Jersey; Irving Zimmerman, 4011 Baltimore avenue, Philadelphia, Pennsylvania. To manufacture tires.

John Danner Shoe Co., October 6, 1911, under the laws of New York; authorized capital \$25,000. Incorporators: John Danner, 668 Northampton street; Emil Baumgaertel, 697 Best street; and Anthony Danner, 1313 Jefferson street, all of Buffalo, New York. To manufacture boots and shoes.

The Diagonal Block Tire Co., October 30, 1911, under the laws of Ohio; authorized capital, \$25,000. Incorporators: J. A. Swinehart, W. R. Talbott and Frank R. Talbott. To manufacture rubber tires and other rubber goods, etc.

Frontier Tire & Rubber Co., October 26, 1911, under the laws of New York; authorized capital, \$250,000. Incorporators: George B. North, Howard M. Gill, and Wm. G. Dargan, all of Buffalo, New York. Location of principal office, Buffalo, New York.

Goodyear Rubber Goods and Manufacturing Co., November 2, 1911, under the laws of Illinois; authorized capital, \$2,500. Incorporators: George A. B. Pfuhl, Edward J. Ader, and Frederick W. Story. Location of principal office 30 West Lake street, Chicago, Illinois. The company was incorporated for the purpose of engaging in general sales, storage, etc., also manufacturing of articles in which rubber is used.

C. W. Haas Tire Seal Co., October 28, 1911, under the laws of Illinois; authorized capital, \$75,000. Incorporators: C. W. Haas, Richard C. Uckema, and Emmet C. May. Location of principal office, 310 North Jefferson street, Peoria, Illinois. To manufacture and deal in automobile tires, rubber goods and automobile accessories.

Higrade Auto Tire Sales Co., September 21, 1911, under the laws of New York; authorized capital, \$50,000. Incorporators: A. Foshay, Russell Goldman, both of 13 Park Row, New York; Helen Neubardt, 220 Roebling street, Brooklyn, New York. Location of principal office, New York. To manufacture rubber goods, etc.

Kelly-Racine Rubber Co., October 16, 1911, under the laws of Wisconsin; authorized capital, \$1,000,000. Incorporators: Martin J. Gillen, Mary E. Lunn, and Milton J. Knoblock, all of Racine. To buy, sell, and manufacture automobile tires, etc.

A. J. Maynard Co., October 18, 1911, under the laws of New York; authorized capital, \$2,000. Incorporators: Andrew J. Maynard, 615 Marcy avenue, Brooklyn, New York; David Detjen, Ridgefield Park, New Jersey, and Chas. Scheland, 249 Prospect place, Brooklyn, New York. Location of principal office, New York. To manufacture rubber goods.

National Rubber Co., September 28, 1911, under the laws of Missouri; authorized capital, \$20,000. Incorporators: Lewis Godlove and Eugene Swarzwald, both of St. Louis, Missouri. To manufacture rubber goods, etc.

National Spring Tire Co., November 7, 1911, under the laws of Illinois; authorized capital, \$125,000. Incorporators: Charles L. Sigman, Jr., Louis Valence and Chas. H. Jackson. To deal in automobile accessories.

The New England Wells Block Tire Co., October 18, 1911, under the laws of Connecticut; authorized capital, \$40,000. Incorporators: Frederick A. Wells, Mary F. Eckhardt and Arthur C. Veith. To deal in automobiles, etc.

The Nonoxidite Mfg. Co., November 3, 1911, under the laws of New York; authorized capital, \$150,000. Incorporators: Arthur Boomhower, 100 Fifth avenue, New York; Wm. B. Westerfield, 15 Exchange place, Jersey City, New Jersey, and Anna H. Litterfield, 100 Fifth avenue, New York. Location of principal office, New York. To manufacture rubber goods, etc.

The Northern Ohio Punctureless Tire Co., October 19, 1911, under the laws of Ohio; authorized capital, \$3,000. Incorporators: Frank E. Lewis and John J. Nieset. Location of principal office, Fremont, Ohio. To act as selling agents for the Dahl punctureless tire, of Minneapolis, and deal in all articles pertaining to automobiles and tires.

Racine Rubber Co., November 6, 1911, under the laws of Wisconsin; authorized capital, \$10,000. Incorporators: Martin J. Gillen, Mary E. Lunn and Milton J. Knoblock. To buy, sell and deal in crude rubber, etc.

The Royal Rubber Cement Co., October 13, 1911, under the laws of New York; authorized capital, \$2,000. Incorporators: Louis Sable, William and Isaac Greenberg, all of 280 Broadway, New York. Location of principal office, New York.

Stein Tire & Rubber Co., October 13, 1911, under the laws of New York; authorized capital, \$10,000. Incorporators: Clarence Mondy and John M. Scelsa, both of 15 William street, New York. Location of principal office, Highmount, New York. To manufacture tires and other rubber.

Suspended Pneumatic Tire Co., November 6, 1911, under the laws of New Jersey. Authorized capital, \$500,000. Incorporators: John Williamson, Harvey E. Randall and Charles H. Stewart, all of 164 Market street, Newark, New Jersey. The company has been incorporated to carry on the business of truckmen, draymen, etc.

Trautman Air-Rubber Tube Co., November 1, 1911, under the laws of New York. Authorized capital, \$100,000. Incorporators: Ira Trautman, 582 Second street; August V. Denis, 53 Berkeley Place, and Wm. G. Newhall, 157 S. Elliott Place, all of Brooklyn, New York. Location of principal office, Manhattan. To manufacture air rubber tubes, etc.

MR. ARMSTRONG WITH THE LOEWENTHAL CO.

Mr. H. G. Armstrong has associated himself with the Loewenthal Co. of New York, with branch offices in Boston, Akron and Chicago. Mr. Armstrong will act as their mill representative in the New England territory. He has had many years' experience in different departments of the rubber industry, having been connected for over 10 years with the United States Rubber Co., holding various important positions; acting at different times as their Baltimore agent, their Chicago agent, and later being associated with their selling department with headquarters in New York. When the late E. H. Paine was manager of sales of the United States Rubber Co. Mr. Armstrong was his efficient and highly esteemed assistant. He was extremely popular all through the footwear trade because of his unfailing courtesy and attractive personality. With his years of experience in the rubber trade, his wide acquaintance and exceptional popularity, he carries with him every assurance of success in his new position.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED OCTOBER 3, 1911.

- N**O. 1,004,582. Tire for vehicle wheels. William D. McNaul, Toledo, Ohio.
- 1,004,626. Tire for vehicles. Michael J. Cantor and Ernest Siegel, New York.
- 1,004,634. Hose appliance. Robert M. Dixon, East Orange, N. J., assignor to Safety Car Heating and Lighting Co. of New Jersey.
- 1,004,642. Rubber tire. George H. Gillette, New York.
- 1,004,658. Spring tire. Joseph M. Keller, Philadelphia, Pa.
- 1,004,717. Scrub apron. Elizabeth P. White, Salisbury, N. C.
- 1,004,788. Weather strip. Henry Higgin, assignor to The Higgin Manufacturing Co.—both of Newport, Ky.
- 1,004,820. Vulcanizing apparatus. Benjamin P. and Frank I. Remy, Anderson, Ind., assignors to The Remy Electric Co., Anderson, Ohio.
- 1,004,864. Vulcanizing press. Myles P. Fillingham, Ansonia, Conn., assignor to Birmingham Iron Foundry, Derby, Conn.
- 1,004,865. Art of vulcanizing. John R. Gammeter, assignor to The B. F. Goodrich Co.—both of Akron, Ohio.
- 1,004,867. Vehicle-tire. Samuel H. Gilson, assignor of one-half to Jay S. Milner—both of Salt Lake City, Utah.
- 1,004,895. Tire. De Witt Nelson, assignor to E. J. Phelps—both of Minneapolis, Minn.
- 1,004,897. Heel-fastener. Francis A. Nolan, St. Paul, Minn.
- 1,004,988. Vehicle-wheel. John Callan, Globe, Ariz.
- 1,005,001. Manufacture of chewing gum. James D. Darling, Philadelphia, Pa., assignor to Keystone Trading Co. of New Jersey.

Design.

- 41,817. Golf ball. William Pearce, Akron, Ohio.

Trade Mark.

- 56,913. Eberhard Faber, New York. The word *Ruby*. For rubber bands.

ISSUED OCTOBER 10, 1911.

- 1,005,123. Attachment for tire-inflating pumps. Henry K. Austin, Reading, Mass.
- 1,005,134. Flexible conduit. Howard H. Balliett, Pittsburgh, Pa.
- 1,005,256. Rubber boot and shoe. Herbert Capron Mason, Providence, R. I., assignor to Hood Rubber Co., Boston, Mass.
- 1,005,296. Dental suction plate. Jacob Petry, Pittsburgh, Pa.
- 1,005,326. Cushion tire. Phillip Schau, Kalamazoo, Mich.
- 1,005,356. Syringe. Judson R. Swift, New York.
- 1,005,377. Tire-armor. Henry J. Von der Lieth, New York.
- 1,005,470. Tire. Charles L. Rempes, Akron, Ohio.
- 1,005,473. Elastic wheel bearing. Gustav Rennerfelt, Scranton, Pa.
- 1,005,585. Cushion heel. William Vogt, New York.
- 1,005,589. Cushion tire. Milton J. Altland, Dillsburg, Pa.
- 1,005,624. Life-preserver. Anders Engström, Topeka, Kan.
- 1,005,690. Automobile tire pump. Frank E. Carlson, Chicago, Ill.
- 1,005,707. Elastic wheel for motor vehicles. William P. Hoopes, Milton, Pa.
- 1,005,787. Fabric package. George H. Sibley, assignor to Stephen J. Sibley—both of Springfield, Mass.

Trade Marks.

- 33,040. National India Rubber Co., Bristol, R. I. Company's name in diamond with anchor. For dental, medical and surgical appliances.
- 50,252. Arnold Otto Meyer, Hamburg, Germany. Photograph of Filipino patriot. For belting, hose machinery packing and non-metallic tires.
- 56,385. Wilhelm Muller, Fabrik zahnärztlicher Instrumente und Maschinen, Berlin, Germany. The letters *W. M.* outside a triangle. For dental, medical and surgical appliances.
- 57,388. La Favorite Rubber Manufacturing Co., Paterson, N. J. The word *Marvel*. For belting, hose, machinery packing and non-metallic tires.

ISSUED OCTOBER 17, 1911.

- 1,005,822. Spraying apparatus with pipe. Jefferson D. Ford, Maryville, Mo.
- 1,005,873. Tire protector. Charles R. Ragsdale, St. Louis, Mo.
- 1,005,891. Vehicle wheel. Martin C. Schwab, Chicago, Ill.
- 1,005,924. Eraser for ink, pigments and the like. Francis Henry Baldwin and William Graff, New York.
- 1,005,960. Pneumatic tire. Robert B. Gray, Port Carbon, Pa.
- 1,005,962. Non-pneumatic elastic tire for vehicle wheels. Oscar Grenier, Boulogne-on-the-Seine, France.
- 1,005,978. Truss. William Jones, Denver, Colo.
- 1,006,014. Elastic cord for garment supports. William Tully Sondley, Huntsville, Ala.
- 1,006,159. Pneumatic tire valve. William C. Wetheroid, Columbus, Ohio.
- 1,006,274. Process for the manufacture of rubber substitute. Nicholas Reif, Hanover, Germany.
- 1,006,376. Tire for wheels. Frank Gallagher, Ridgeway, Iowa.

Trade Mark.

- 49,759. I. B. Kleinert Rubber Co., New York. The word *Gloria*. For dress shields.

ISSUED OCTOBER 24, 1911.

- 1,006,465. Vehicle wheel and tire. Melville Clark, Chicago, Ill.
- 1,006,470. Exercising apparatus. Matthew Duffner, Pittsburgh, Pa.
- 1,006,570. Cover for pneumatic tires. Richard Latour, Menin, Belgium.
- 1,006,588. Gas-tube tip. Albert W. Nicholls, East Norwalk, Conn.
- 1,006,630. Wiping and rubbing device. Walter H. Clarke, Huntington Park, Cal.
- 1,006,640. Insulated air-pipe. Arthur Faget, San Francisco, Cal.
- 1,006,641. Fountain brush. Joel Barlow Fesler, New York.
- 1,006,665. Cushion tire. George H. Matteson, assignor of one-half to John M. Hayes—both of Toledo, Ohio.
- 1,006,671. Hose connection. Claus D. Myer, assignor to Simplex Hose Connection Co.—both of Jersey City, N. J.
- 1,006,712. Tire protector. Rudolph Aue, San Antonio, Texas.
- 1,006,759. Yieldable wheel. John Klatt, Blue Earth, Minn.
- 1,006,945. Eye-bathing mask. James D. Houston, Gage, Okla.
- 1,006,979. Dental suction plate. Carl Rauhe, Dusseldorf, Germany.
- 1,007,013. All-flexible rubber sink seal. Emily A. Sears, Brooklyn, N. Y.
- 1,007,015. Tire. Thomas J. Thatcher, assignor of one-third to Frank B. Thatcher, and one-third to James Gray—all of Detroit, Mich.
- 1,007,016. Head for rubber straining machines. James W. Weir, assignor to the Housatonic Machine & Tool Co.—both of Bridgeport, Conn.
- 1,007,018. Vehicle tire. Harry Wilson and Carl Guder, McKeesport, Pa.

Trade Marks.

- 54,217. Needham, Venll & Yzack, Ltd., Sheffield, England. A picture of a hunting horn. For cutlery, machetes and tools.
- 57,752. Imperial Rubber Co., New York. The word *Imperial*. For electrical apparatus, machines and supplies.
- 58,346. J. J. Beyerle Mfg. Co., New York. The words *The Puritan*. For armpit shields.

ISSUED OCTOBER 31, 1911.

- 1,007,064. Pneumatic tire for wheels. Henry N. Carragher, Fall River, Mass.
- 1,007,087. Resilient wheel. James S. Gammon, Oklahoma, Okla.
- 1,007,296. Rubber gear for water meters. William R. Larrabee, assignor to Union Water Meter Co.—both of Worcester, Mass.
- 1,007,326. Hose-coupling. William T. Boyd, Ottumwa, Iowa.
- 1,007,375. Resilient wheel. Frank Morris, Omaha, Neb.
- 1,007,394. Spare-tire holder. Abram L. Shutter, West Haven, Conn.
- 1,007,434. Apparatus for forming figured treads on tires. Louis Peter Destribats, Trenton, N. J.
- 1,007,436. Vehicle wheel. William Enright, Detroit, Mich.
- 1,007,492. Fountain brush. Peter B. Ruch, University Place, Nebraska.
- 1,007,640. Tire tool. James L. Butler, Akron, Ohio.
- 1,007,657. Nozzle-holder. Frederick W. Freund, Santa Monica, Cal.
- 1,007,658. Lawn sprinkler. Lewen R. Nelson, Peoria, assignor of one-half to Central Brass & Stamping Co.—both of Illinois.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1910.

*Denotes Patents for American Inventions.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, OCTOBER 4, 1911.]

- 14,040 (1910). Production of isoprene. A. Heinemann, London.
- 14,041 (1910). Production of caoutchouc by polymerizing isoprene. A. Heinemann, London.
- 14,240 (1910). Improvements in vacuum cleaning sliders. W. T. Robertshaw, Manchester.
- 14,251 (1910). Process of devulcanizing rubber. L. A. M. Bianchieri, Milan, Italy.
- 14,257 (1910). Vulcanization of rubber in tires. W. G. Boonzaier, Carnarvon, Cape Colony, South Africa.
- 14,292 (1910). Rubber ball in siphons. L. Wainwright, Folkestone.
- 14,376 (1910). Air-tight soother in teething pads. E. J. Rainsford and G. A. Laughton, Birmingham.
- *14,379 (1910). Treadpiece for footwear and crutches. P. W. Pratt, Boston, Mass.
- 14,441 (1910). Improvements in rubber heel pads. W. A. Brigg and J. Helliwell, Keighley, Yorkshire.
- 14,469 (1910). Protective cover for pneumatic tires. L. Petz, Gyor, Hungary.
- 14,515 (1910). Elastically supported frictional massage appliances. W. Otto, Berlin, Germany.
- 14,519 (1910). Improvements in tread bands of tires. C. Burnett, Durham.

- 14,547 (1910). Flexible diaphragm for tire-valves. H. R. Heya, Blackpool, and W. Aked, St. Anne's-on-Sea.
14,557 (1910). Strengthening of syringe bulbs. A. M. Edelstein, London.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, OCTOBER 11, 1911.]

- 14,571 (1910). Rubber sponge on safety razors. P. Sherrin, Ingatestone, Essex.
14,673 (1910). Rubber packing pieces for wind screens of road vehicles. W. T. Jolliffe, Rossett, Denbighshire.
14,837 (1910). Covers for vehicle tires. F. Doherty and W. J. Robbins, Wellington, New Zealand.
15,000 (1910). Improved air chambers in elastic tires. L. A. Garchey, Paris, France.
*15,039 (1910). Use of rubber in securing leather to staking machine. M. Steinharter, Philadelphia, Pa.
15,141 (1910). Rubber buffer for springs. C. H. Gray, Silvertown, Essex.
15,158 (1910). Rubber iayer in horseshoes. H. Frey, Diessbach, near Buren, Switzerland.
15,163 (1910). Rubber-proofed canvas case for footballs and other balls. Orb Works, Cowley, and J. Turner, Uxbridge—both in Middlesex.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, OCTOBER 18, 1911.]

- 2,535 (1910). Soles, heels, etc., from layers of rubber-treated fabric, moulded and vulcanized. I. S. McGiehan, London.
15,228 (1910). Adjustable blade for rubber-tapping knives. Wynn, Timmins & Co., and H. S. Wynn—both of Birmingham.
15,254 (1910). Production of artificial rubber from divinyl. Farbenfabriken vorm. F. Bayer & Co., Elberfeld, Germany.
*15,270 (1910). Anti-skidding appliance. R. A. Moore, 29 Broadway, New York.
15,327 (1910). Use of rubber to make bristles in wire brushes springy. H. T. Alesbury, London.
15,354 (1910). Use of rubber rings in toy guns. P. R. Shrapnel, Coventry.
15,364 (1910). Jointless ankle-strap for rubber overshoes. North British Rubber Co. and S. F. Roberts—both in Edinburgh, Scotland.
15,416 (1910). Improvement in backing of rubber cushions of billiard tables. F. A. Akcock, Melbourne.
15,419 (1910). Rubber stoppers for paste containers. E. A. Wilsch, La Garonne Colombes, France.
*15,448 (1910). Rubber gasket for telephone mouthpieces. J. B. O'Hara, Philadelphia, Pa.
15,474 (1910). Projections in tread band surfaces of tires. J. C. Barker, Leeds.
15,540 (1910). Rubber tread pads for heels. J. V. F. A. Royat, Puy-de-Dome, France.
15,611 (1910). Blocks and plates in pneumatic tires. J. S. and T. B. Richardson, Leeds.
15,728 (1910). Non refillable bottle with rubber sleeve. E. Dorschel, Kleinthiemig, near Grossenhain, Saxony.
15,745 (1910). Improvements in tread bands of tires. A. Ascheri, Paris, France.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, OCTOBER 25, 1911.]

- 15,776 (1910). Improvements in the manufacture of solid tires. S. G. Board, Manchester.
15,792 (1910). Vulcanized cable covering. J. Bowyer and Anchor Cable Co., Leigh, Lancashire.
15,797 (1910). Composition for waterproofing leather, including a solution of Para rubber. F. Fölsch, Wernigerode, Germany.
15,803 (1910). Motor cycle belts with rubber strips. W. Pollin, Spalding, Lincolnshire.
15,832 (1910). Rubber washers in spring wheels. H. G. Hugon, Calais, France.
15,933 (1910). Rubber cap for electric incandescent lamps. R. F. Russell, London, and E. T. Hutson, Westcliff-on-Sea.
*15,966 (1910). Improvements in cushion tires. M. C. Overman, 391 West End avenue, New York.
16,046 (1910). Outer tire jackets of rubber tape. A. Vandervoort, Belleville, Ontario, Canada.
*16,070 (1910). Apparatus for moulding a number of rubber shoes. M. C. Clark, La Crosse, Wisconsin.
16,079 (1910). Puncture-filling compositions. R. Adey, Hanley.
16,170 (1910). Use of rubber in bolt channels of wheels. G. F. Powell, Bath.
16,291 (1910). Insoles for rubber boots and shoes. M. M. Dessau, London.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

- 427,286 (March 7, 1911). Perkin, Weizmann, Mathews & Strange. Improvements in synthetic production of rubber and of an intermediate product.
427,299 (March 14). Farbenfabriken vorm. Friedr. Bayer & Cie. Process for manufacture of products resembling vulcanized rubber.
427,411 (March 15). R. Rhoné. Wheel with elastic tire.
427,383 (May 26, 1910). L. Pinkala. Press for moulding plastic substances.
427,519 (March 18, 1911). P. V. Reynier. Improvements in pneumatic tires for automobiles and other vehicles.
427,523 (March 21). S. Cooke and W. C. Davis. Process and method for making rubber heels and similar articles.
427,625 (March 22). Emile Baumgarten. Elastic fabric for suspenders.

- 427,701 (March 24). A. J. Depond. Dismountable rim for pneumatic tires.
427,871 (March 29). A. W. Audibert. Air chamber with multiple compartments.
427,924 (March 10). T. F. Baldwin. Protector for vehicle tires.
428,154 (April 6). W. Kaps. Elastic fabric.
428,039 (March 28). A. Poizat. Covered tire for automobiles and other vehicles.
428,053 (April 3). C. Burnett. Improvements in covers of elastic tires.
428,128 (April 8). L. Mousset fils. Elastic tire for wheels of motor trucks and other heavy vehicles.
427,879 (March 29). R. Derry. Improvements in or relating to the treatment of rubber.
428,168 (April 6). J. Dodon. Wrapper or counter-wrapper for pneumatic tires.
428,433 (April 13). Rubber Substitute Co. (1910) Limited. Process for the manufacture of artificial rubber, rubber thus obtained and articles made of the same.
428,491 (April 14). G. Clavian. Protector for pneumatic tires.
428,553 (March 17). W. Haseloff. Anti-skid appliance for automobiles.
428,602 (April 15). J. S. Stocks & G. W. Bell. Improvements in the manufacture of wrappers of pneumatic tires.
428,628 (June 25, 1910). L. A. Garchey. Tire for vehicle wheels.
428,648 (April 18, 1911). E. E. Hoff. Improvements in elastic tires.
428,701 (April 19). H. Hamet & L. Momier. Process for coagulating the rubber contained in the latex of rubber-producing plants.

[NOTE.—Printed copies of specifications of French patents can be obtained from R. Robet, Ingenieur-Conseil, 16 avenue de Villier, Paris, at 50 cents each, postpaid.]

THE GERMAN EMPIRE.

PATENTS ISSUED (with Dates of Validity).

- 240,074 (from December 6, 1910). Dr. Oswald Silberrad, Buckhurst Hill, England. Extraction of isoprene from oil of turpentine.
240,127/8 (from July 24, 1910, and December 21, 1910). W. Hiestrich Nachf., Hamburg. Extraction of rubber and like substances.
240,249 (from September 24, 1910). Hans Stephan, Falkensteinstrasse 49, Berlin. Manufacture of slabs from masses of caseine.
240,428 (from June 28, 1910). Georges Desson, Paris. Pneumatic tires with interchangeable treads.
240,501 (from June 12, 1910). Jacob Kaufmann, Kaiser-Allee 172, Berlin-Wilmersdorf. Insertion of metal in masses of celluloid, hard rubber, etc.
240,904 (from May 2, 1911). Supplementary to above.
240,927 (from July 5, 1910). Fritz Loewi, Kronenstrasse, 61/63 Berlin. Manufacture of leathery compositions out of leather waste and chopped-up waste rubber.
240,951 (from December 15, 1909). Dr. Edward van den Kerkhoff, Düsseldorf. Production of masses resembling gutta-percha.
240,856 (from March 2, 1911). Walter Redlich, Albechstr. 2 Dresden. Packing for movable metal packings.
240,816 (from September 29, 1910). Oscar Grenier. Boulogne-sur-Seine, France. Elastic tire with surrounding reinforced layer.
240,781 (from November 25, 1910). Rodolph Reizer and A. W. Bernhardt, Paris. Toy aeroplane with rubber motor.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of india-rubber and gutta-percha from the United States for the month of September, 1911, and for the first nine months of five calendar years:

Months.	Belting Packing and Hose.	Boots and Shoes.	All Other Rubber.	Total.
September, 1911.....	\$219,389	\$173,783	\$587,276	\$980,448
January-August	1,482,052	1,175,597	4,815,708	7,473,357
Total, 1911.....	\$1,701,441	\$1,349,380	\$5,402,984	\$8,453,805
Total, 1910.....	1,592,594	1,664,215	4,258,968	7,515,777
Total, 1909.....	1,301,497	1,127,806	3,059,146	5,488,449
Total, 1908.....	926,566	1,043,528	2,629,927	4,600,021
Total, 1907.....	1,051,903	1,213,992	2,997,815	5,263,710

The above heading, "All Other Rubber" for the month of September, 1911, and for the first nine months of the current year, includes the following details relating to tires:

Months.	For Automobiles.	All Other.	Total.
September, 1911.....	values \$226,451	\$41,456	\$267,907
January-August	1,715,322	395,745	2,111,067
Total, 1911.....	\$1,941,773	\$437,201	\$2,378,974

New Rubber Goods in the Market.

"SOFT-SPOTS" HEEL CUSHIONS.

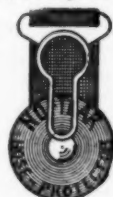
A SIMPLE, hygienic pneumatic heel cushion for shoes is called "Soft Spots." It differs from the ordinary rubber heel, both in construction and size. It is worn *inside* of the shoe, being caught down by a small artist's tack which is glued to the under surface. This cushioned heel is not more than one-eighth of an inch in thickness and is composed of many small pneumatic air cushions or globules hermetically sealed, with ventilating



holes between the cushions. The upper side of the cushion, and the one upon which the heel rests is of thin leather and prevents artificial heating or perspiration. These cushioned heels are easily slipped into any shoe, and come in all sizes for men, women and children. [Byrne's Pneumatic Heel Cushions. International Specialty Co., San Francisco, California.]

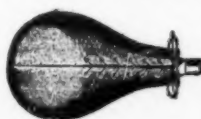
NO-TEAR HOSE PROTECTOR.

To overcome the dropping of stitches and the tearing of thin hose by the ordinary supporter, the "No-Tear" Hose Protector Company, of Portland, Maine, have put on the market a thin rubber disc with a hole in the center, which snaps onto the garter stud when in use. This disc need never be removed, except for cleaning, which is done with ordinary soap and water. This disc will fit any garter, no matter what the size, and is so light in weight that it is not a noticeable addition, except as it preserves the life of the stocking. These protectors are very inexpensive, and come in sets of six on a card, giving full instructions for use.



CLOTH COVER FOR MOTOR HORN BULBS.

Our English friends have a keener sense of conservation than we have on this side of the water. In illustration of that excellent trait here is a cut of the "Duco" horn with cover, which is of cloth and intended to protect the rubber bulb from the elements. A good idea, but one that would probably not be widely adopted in this country. [Brown Brothers, Limited, London, England.]



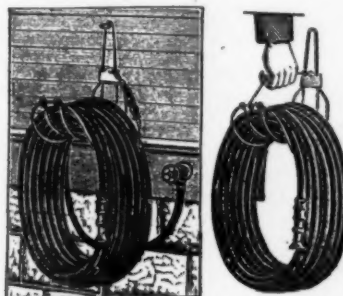
HORN BULB COVER.

RUBBERIZED SCHOOL BAGS.

A fad among the school children of Boston is a waterproofed bag for carrying their school books. These bags are about eighteen inches deep and fourteen inches wide, and are very inexpensive. They are made of a rubberized material, very light but durable, and come in black only.

A PRACTICAL HOSE RACK.

This hose rack is so shaped as to keep the hose in coil, and it cannot become bent and break. The rack is fastened to the wall just above the faucet, or by attaching the flexible handle



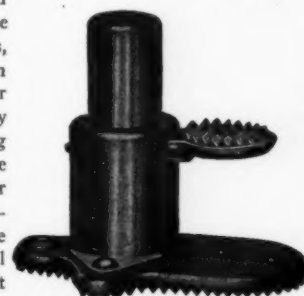
HOSE RACK AND CARRIER.

at the back, with the front of the rack it may be easily carried. The rack is galvanized and will hold 100 feet of $\frac{3}{4}$ -inch hose. If all the hose is not needed when watering, the rest may be left as it is; the water will run through just the same. This rack can also be used in stores to display garden hose, as it is rather

ornamental. [The Specialty Manufacturing Co., Anthony Park, Minnesota.]

A PORTABLE DOOR HOLDER.

An ingenious and very practical portable door holder is here shown. It is made of steel, heavily riveted, with a strong spring, and padded with the best of rubber. It weighs only seven ounces, and so is easily carried about. It will not scar the most highly polished woods, and will hold any door open at any desired angle and for any length of time. It is easily operated by simply pressing the plunger down with the foot and drawing the door over the rubber padded projection. To release, the plunger is pressed down until the door swings free again. It is also a handy contrivance for carpenters or locksmiths, as it holds the door perfectly steady, no matter how much pressure is brought to bear. Made in three finishes—bronze, nickel and oxidized copper. [Portable Door Check Co., 141 Milk street, Boston, Massachusetts.]



PORTABLE DOOR HOLDER.

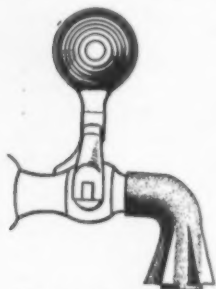
RUBBER BAGS FOR INNER TUBES.

A neat carrier and protector for spare inner tubes is shown in the illustration. It is made of a rubberized fabric absolutely dirt and water proof. It is large enough to hold five inner tubes and will last a long time. The case protects the tubes from oil, grease, water and from rubbing against tools—all great destroyers. Many times when in a hurry to put in a tube it is found that it will not hold air or has rotted in some way; all this is due to carelessness in the carrying. It is claimed that the price of more than one tube a season can be saved by carrying them in these bags. [The Goodyear Tire & Rubber Co., Akron, Ohio.]



IT SAVES THE GLASSES.

The delicate glasses sometimes used in drug stores at the soda-water fountain and in saloons and hotels are very likely to be broken when they strike against a metal faucet. A contrivance called a glass faucet protector has been invented to obviate this difficulty. It is a corrugated rubber sleeve that goes over the faucet and acts as a cushion. [McKenna Rubber Co., Schenectady, New York.]



THE MCKENNA FAUCET
PROTECTOR.

A PORTABLE SHOWER BATH.

The Englishman has been celebrated for his propensity for carrying his tub with him wherever he goes; but the Australian is really going him one better, for there has recently been introduced into the Australian market a device by which a man can carry his shower bath around with him. It is not a very complicated device either. It consists of a tank, holding one or two gallons, which is filled with water of a temperature to suit the individual taste and then hung up on a peg or put up on a shelf. Attached to the bottom of this tank is a small rubber pipe several feet long, and at the end of it is a brush, which serves either to spray the water for a shower or as a water brush. A shallow tray, in which the bather stands, collects the water and completes the outfit.

YOUR OWN TIRE REPAIRER.

Every automobilist has plenty of trouble with his tires. Here is a new preparation, called "Vulco," intended to relieve him of at least some of his troubles. It is a rubber substance for repairing injuries to auto tires and tubes and all other rubber materials. The outfit consists of two small cans, one holding the Vulco, the other the Vulco cement. These two are enclosed, with a few pieces of sandpaper, in a larger can, which in turn is not too bulky to be carried in the pocket. In case of any damage to the tire the spot is first rubbed with sandpaper, then washed with gasoline, which is allowed to evaporate, and then a coat of Vulco cement is applied. This dries in about 10 minutes. When the cement is dry, a small piece of Vulco is kneaded between the fingers until plastic and then pushed into the injured spot with the thumb. The action of the air will thoroughly cure the Vulco, and if the repair is done at night the place is sound and serviceable next morning. [Standard Rubber and Cable Co., Bristol, Connecticut.]

A NEW TIRE PRESERVATIVE.

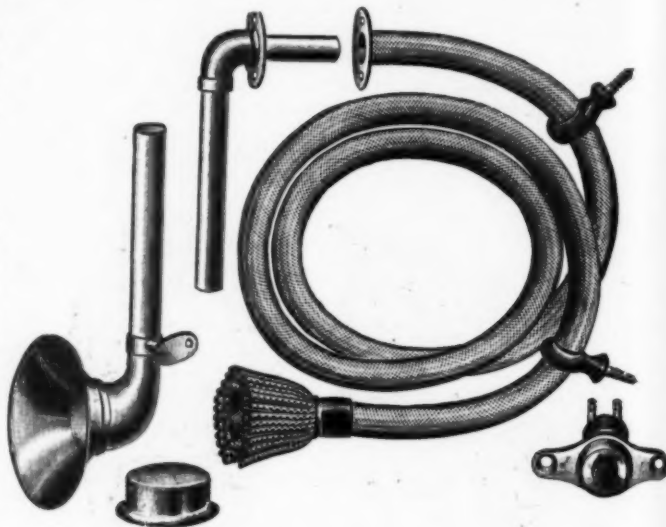
Among the many preservatives for tires is one called "Tire-new." It is claimed to be a "scientific rubber coating," and will make tires look like new and last much longer. It is particularly adapted for winter use and is always ready for application. It comes in colors, gray and white. [National Rubber Co., St. Louis, Missouri.]

HAT ELASTIC IN QUEEN MARY'S COURT.

It will be of interest to the wearers of hatpins to note that Queen Mary has issued an edict that the ladies of her court shall not wear or in any way use the dangerous hatpins, as she states they are "unjust to others and risky to one's self." In place of these needles of torture she proposes that the creations of flowers and curls shall be attached to the head by means of the good old-fashioned elastic band of generous width and sober colors.

AN AUTOMOBILE MEGAPHONE.

Something new, which is an extensible telescoping megaphone, has recently been put on the market. The accompanying illustration shows the different parts. The megaphone can be adjusted



AN AUTOMOBILE MEGAPHONE.

to any height to suit the chauffeur. The extension horn is made either with or without an inside whistle. The rubber tubing is covered with silk and the mouthpiece is either made plain or covered with tasseled silk, and the runners are of brass. [E. F. Rogers Co., Inc., Philadelphia, Pennsylvania.]

A TIRELESS TIRE.

"The Tire that Never Tires" is the catch line the Cleveland Puncture Proof Tire Company uses in exploiting its "air



A PUNCTURE-PROOF TIRE.

cushion" tire. This tire, which needs no inflation, "is as easy," its manufacturers claim, "as a pneumatic tire when properly inflated." The accompanying cut gives a cross sectional view. [The Cleveland Puncture Proof Tire Company, Columbus, Ohio.]

The Inter-State Rubber Co., Omaha, Nebraska, is circulating a 36-page catalogue, size 6 x 9 inches, illustrating the rubber clothing, boots and shoes, leggings, and other rubber articles sold by this company, and giving the net prices of the various articles mentioned.

EMERGENCY BAND AND PROTECTION PATCH.

NEGLECTED repairs or repairs that are improperly made are the cause of many tire troubles. A small cut will be made in a tire which, properly taken care of, would result in very little trouble, but improperly cared for soon renders the tire hopeless.



FIG. I.



FIG. II.

One improper way to take care of these cuts is to apply an inside patch immediately on the cut as shown in Fig. I, which, instead of helping the situation, in reality aggravates it. This patch having nothing to keep it properly in place, acts as a wedge, and gradually pushes through the cut, pulling the fabric apart as shown in Fig. II. This result really does not come from any weakness in the tire, for any tire is likely to come in contact with sharp objects with a resulting cut. This condition is due to an improper method of repairing.



FIG. III.



FIG. IV.

The B. F. Goodrich Co., Akron, Ohio, has devised an emergency band and inside protection patch to meet this situation.

These are shown in Figs. III and IV. When the protection patch is put inside the tire and the emergency band laced around the place, the cut is permanently repaired.

TIRES FOR ELECTRICAL VEHICLES.

There has been a great deal of discussion and quite a diversity of opinion among people interested in electrical vehicles, both pleasure and commercial, as to the best sort of tire. The opinion is practically unanimous for heavy commercial electrical vehicles that the tire should be solid, as owing to their great weight the pneumatic tire is almost out of the question; but there is some difference of opinion regarding the tiring of pleasure electrical vehicles. The predominating opinion, however, seems to be that even in this case the solid tire is preferable, because these vehicles do not ordinarily require a great rate of speed. They are not therefore subjected to as much jar and jolt as the faster moving automobiles, and the solid tire generally possesses sufficient resiliency to protect against the jarring of the batteries and mechanism; while the using up of energy, that is the current consumption, is less with the solid tire. Of course it would be even less with a hard tire, but the hard tire would be uneconomical, to say nothing of being uncomfortable, because of the jarring and the consequent wearing of the batteries and mechanisms.

WINTERING YOUR TIRES.

The United States Tire Co., which from time to time distributes to tire users a good deal of advice as to tire care, has recently circulated some seasonable suggestions regarding the proper treatment of tires during the winter. Condensed, they are as follows: If the car is to be laid up for the winter, the tires should be removed, washed with soap and water, wrapped up in strips of paper or cloth and put away in a dark place, the temperature preferably about 50 degs. If the car is to be out of service for some time, but it is thought advisable not to remove the tires, the wheels should be jacked up and about 5 pounds of air left in each tire to preserve its shape and keep it soft and pliable.

But where the car cannot be jacked up and is allowed to stand unused for some time, the tires should be kept well inflated and the car shifted a little from time to time so that the pressure will not remain too long on one spot.

AUTOMOBILE EXPORTS INCREASING AND IMPORTS DECREASING.

The figures compiled by the Bureau of Statistics at Washington show that the export business in automobiles increased about 75 per cent. during the nine months ending with September, 1911, over the same nine months of the preceding year, while that period in turn showed an increase of nearly 100 per cent. over the same period in 1909. But imports have constantly decreased.

The number of automobiles imported in the nine months ending with September, 1911, was 670, valued at \$1,450,222; against 809 automobiles valued at \$1,623,140 in the corresponding months of 1910 and 1,208 valued at \$2,218,414 in the corresponding months of 1909. Of the 670 automobiles imported in the nine months of 1911, 227 were from France, 113 from Germany, 105 from the United Kingdom and 85 from Italy. The number of automobiles exported in the nine months under consideration was, in 1911, 11,244, valued at \$11,565,034, against 6,472, valued at \$8,874,066 in the like period of 1910 and 3,426 valued at \$5,481,707 in the like period of 1909. The largest exportation in the nine months of 1911 was to Canada, 4,107 cars, compared with 2,563 to the United Kingdom, 352 to France and 884 to other parts of Europe, while shipments were also made to Mexico, the West Indies, and various countries in South America, Asia, Oceania and Africa.

Review of the Crude Rubber Market.

THE London sales of October 31, which had been expected to govern the operations of buyers, resulted in about one-third of the offerings being sold, the closing prices showing an advance over those ruling earlier in the day. Continued abstention on the part of large continental manufacturers, owing to the weather not having been favorable to the reduction of stocks, was considered as accounting for the relatively small proportion sold. Ceylon qualities seem to have been relatively in best demand.

During the succeeding week, holders refusing to grant concessions, the established basis of \$1.02 was maintained. An advance to \$1.05 was then obtained, followed by a drop to \$1.02 by the middle of the month.

This slight fall was counteracted by a return by 28th to \$1.04. A better and more confident feeling characterized the London market during the closing days of November. Both buyers and sellers seem to have been agreed on the policy of maintaining values.

NEW YORK QUOTATIONS.

FOLLOWING are the quotations at New York for Pará grades, one year ago, one month ago and November 29—the current date.

PARÁ.	Dec. 1, '10.	Nov. 1, '11.	Nov. 29, '11.
Islands, fine, new.....	128@129	97@ 98	93@ 94
Islands, fine, old.....	none here	100@101	96@ 97
Upriver, fine, new.....	150@152	104@105	103@104
Upriver, fine, old.....	152@153	106@107	107@108
Islands, coarse, new.....	72½@ 73½	57@ 58	58@ 59
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	108@109	90@ 91	89@ 90
Upriver, coarse, old.....	none here	none here	none here
Cametá.....	75@ 76	59@ 60	60@ 61
Caucho (Peruvian) ball.....	105@106	89@ 90	89@ 90
Caucho (Peruvian) sheet.....	none here	none here	none here

PLANTATION PARÁ.

Fine Smoked sheet.....	165@166	114@115	117@118
Fine pale crepe.....	156@157	115@116	118@119
Fine sheets and biscuits.....	150@151	112@113	113@114

CENTRALS.

Esmeralda, sausage.....	96@ 97	82@ 83	83@ 84
Guayaquil, strip.....	none here	none here	none here
Nicaragua, scrap.....	92@ 93	81@ 82	82@ 83
Panama.....	none here	none here	none here
Mexican, scrap.....	92@ 93	82@ 83	81@ 82
Mexican, slab.....	60@ 61	none here	none here
Mangabeira, sheet.....	75@ 76	58@ 63	62@ 63
Guayule.....	65@ 66	45@ ..	47@ 48
Balata, sheet.....	..@ 80	85@ 86	86@ 87
Balata, block.....	..@ 56	53@ 54	55@ 56

AFRICAN.

Lopori ball, prime.....	125@126	98@ 99	101@102
Lopori strip, prime.....	none here	none here	none here
Aruwimi.....	110@111	94@ 95	100@101
Upper Congo ball, red.....	115@116	90@ 91	96@ 97
Ikelemba.....	none here	none here	none here
Sierra Leone, 1st quality.....	124@125	86@ 87	84@ 85
Massai, red.....	124@125	89@ 90	85@ 86
Soudan Niggers.....	112@113	none here	81@ 82
Cameroon ball.....	66@ 67	65@ 66	63@ 64
Benguella.....	85@ 86	65@ 66	62@ 64
Madagascar, pinky.....	none here	76@ 77	75@ 76
Accra, flake.....	45@ 46	28@ 29	27@ 28
Pontianak.....	5½@ 5¾	5½@...	5½@...

EAST INDIAN.

Assam.....	none here	none here	none here
Pontianak.....	5½@ 5¾	5½@...	5½
Borneo.....	none here	none here	none here

Late Pará cables quote:

	Per Kilo.	Per Kilo.
Islands, fine.....	3\$900	Upriver, fine..... 5\$150
Islands, coarse.....	2\$200	Upriver, coarse..... 4\$200
		Exchange..... 169-32d.

Latest Manáos advices:

Upriver, fine.....	5\$300	Exchange..... 169-32d.
Upriver, coarse.....	4\$100	

New York.

IN REGARD to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York) advises as follows: "During November the demand for commercial paper has continued very good, both from city banks and those out of town, the best rubber names ruling at 4½@5 per cent., and those not so well known at 5½@5¾ per cent."

NEW YORK PRICES FOR OCTOBER (NEW RUBBER).

	1911.	1910.	1909.
Upriver, fine.....	\$1.00@1.12	\$1.37@1.50	\$2.02@2.15
Upriver, coarse.....	.90@ .96	1.02@1.20	1.20@1.32
Islands, fine.....	.96@1.07	1.20@1.46	1.83@2.02
Islands, coarse.....	.56@ .63	.73@ .90	.72@ .82
Cametá.....	.60@ .66	.75@ .89	.83@ .96

African Rubbers.

NEW YORK STOCKS (IN TONS).

October 1, 1910.....	375	May 1, 1911.....	98
November 1.....	100	June 1.....	90
December 1.....	140	July 1.....	90
January 1, 1911.....	115	August 1.....	90
February 1.....	115	September 1.....	112
March 1.....	111	October 1.....	67
April 1.....	98	November 1.....	45

WEEKLY MOVEMENT OF LONDON PRICES. [IN SHILLINGS AND PENCE PER POUND.]

1911.		
July 7.....	4/2½	September 15..... 5/
July 14.....	4/5½	September 22..... 4/10½
July 21.....	4/7	September 29..... 4/8
July 28.....	4/8	October 6..... 4/7
August 4.....	4/7½	October 13..... 4/5
August 11.....	4/7½	October 20..... 4/6½
August 18.....	4/7½	October 27..... 4/4
August 25.....	4/10½	November 3..... 4/3
September 1.....	4/8½	November 10..... 4/4½
September 8.....	4/9	November 17..... 4/3

Liverpool.

WILLIAM WRIGHT & Co. report [November 1]:

Fine Pará.—There has been rather more activity in the market, but prices have gradually declined to 4s. 3¼d., a drop of about 4d. per pound. A revolution has broken out in the Acre district, but this, while it will probably delay supplies for a time from that region, will not eventually affect the crop. Meantime the market treats it with indifference, as there is plenty of spot rubber still to be sold. The tone on the whole is steady. America is willing to buy and has bought (about 400 tons shipped from here), but as soon as prices advance beyond a certain point they withdraw and wait a further opportunity. This we think also applies to European manufacturers, consequently the present outlook points to moderate fluctuations. Closing value: Hard Fine, 4s. 3d. [\$1.03]; Soft Fine, 4s. [97.3 cents].

Amsterdam.

JOOSTEN & JANSEEN REPORT [NOVEMBER 1]:

Yesterday's sale was marked by a strong demand for all plantation grades: for *Heveas* as well as for *Rambongs* and *Castillos*. The few lots bought in were of inferior quality or were being held above the market value. The prices paid exceeded the valuations by the equivalent of 2 to 6 cents per pound. About 40,000 pounds were sold and a similar quantity is now being offered, including *Hevea* crepe and sheets, *Castillos*, *Ficus* and *Ceara*.

Rubber and Caucho Receipts at Manaus.

From—	JUNE.			JULY.			AUGUST.			SEPTEMBER.		
	1911.	1910.	1909.	1911.	1910.	1909.	1911.	1910.	1909.	1911.	1910.	1909.
Rio Purús-Acre	241	252	188	369	313	425	494	433	448	687	599	545
Rio Madeira	162	297	163	261	332	369	530	373	369	140	139	268
Rio Juruá	60	87	125	38	38	27	91	95	204	277	208	87
Rio Javary-Iquitos	118	221	161	104	29	210	206	220	321	201	222	120
Rio Solimões	14	13	20	18	22	4	74	52	33	131	128	104
Rio Negro	44	14	8	9	...	5	...	...	...	2	...	2
Total	639	884	665	799	734	1,040	1,395	1,183	1,375	1,438	1,296	1,126
<i>For Shipment From—</i>												
Manaus	512	756	536	647	610	883	1,022	972	1,281	1,108	1,136	907
Pará	127	128	129	152	124	157	373	211	94	330	160	219
Total	639	884	665	799	734	1,040	1,395	1,183	1,375	1,438	1,296	1,126

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.						
	Fine and Medium.	Coarse.	Total, 1911.	Total, 1910.	Total, 1909.	
Stocks, September 30...tons	271	51 =	322	175	142	
Arrivals, October	1,504	419 =	1,923	1,240	1,180	
Aggregating	1,775	470 =	4,156	1,415	1,322	
Deliveries, October	1,465	428 =	1,893	1,204	1,106	
Stocks, October 31	310	42 =	352	211	216	
PARA.						
	1911.	1910.	1909.	1911.	1910.	1909.
Stocks, September 30 tons	2,690	860	755	855	1,308	325
Arrivals, October	2,990	2,705	2,740	288	332	730
Aggregating	5,680	3,565	3,495	1,143	1,640	1,055
Deliveries, October	2,205	2,690	3,265	393	520	825
Stocks, October 31....	3,475	875	230	750	1,120	230
ENGLAND.						
	1911.	1910.	1909.	1911.	1910.	1909.
World's visible supply, October 31...tons	5,887	3,524	2,537			
Pará receipts, July 1 to October 31.....	7,950	7,535	7,460			
Pará receipts of caucho, same dates.....	1,050	1,800	1,140			
Afloat from Pará to United States, Oct. 31	530	278	966			
Afloat from Pará to Europe, October 31..	780	1,040	895			

Rubber Stock at Pará.

A slight increase of stock at Pará was recorded for October 31, the recent figures being:

1911.	Tons.	1911.	Tons.
January 31.....	2,085	June 30.....	4,545
February 28.....	3,787	July 31.....	3,884
March 31.....	4,214	August 31.....	3,450
April 30.....	5,104	September 30.....	3,102
May 31.....	5,350	October 31.....	3,320

The proportion of rubber on October 31 in first hands was only 470 tons; that in second hands still predominating.

Para.**R. O. AHLERS & Co. REPORT [OCTOBER 31]:**

Since our last report prices have declined further all around, as entries continue to be regular.

R. O. AHLERS & Co. report [November 31]:

Today showed a slightly firmer tendency, but the prices are considered very unsatisfactory.

Plantation Rubber from the Far East.**EXPORTS OF CEYLON GROWN RUBBER.**

[From January 1 to October 23, 1910 and 1911. Compiled by the Ceylon Chamber of Commerce.]

	1910.	1911.
To Great Britain.....pounds	1,135,094	2,371,465
To United States.....	1,033,920	1,436,403
To Belgium	35,799	544,157
To Japan	448	40,762
To Germany	10,724	32,881
To Australia	4,604	31,990
To Canada	1,911	13,830
To Holland .....	...	8,413
To Italy	841	4,035
To Austria .....	...	3,088
To France .....	...	117
To India .....	...	85
To Africa .....	...	35
Total	2,223,341	4,487,261

[Same period 1909, 982,680 pounds; same 1908, 606,907.]

TOTAL EXPORTS FROM MALAYA.

[From January 1 to dates named. Reported by Barlow & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.]

From—	1909.	1910.	1911.
Singapore (to Sept. 27)...pounds	1,902,916	2,659,962	4,538,628
Penang (to Sept. 15).....	1,685,291	1,546,034	3,256,167
Port Swettenham (to August 31).....	...	5,410,735	7,488,322
Total	3,588,207	9,616,731	15,283,117

Rubber Scrap Prices.

LATE NEW YORK QUOTATIONS.—Prices paid by consumers for carload lots, per pound—are practically unchanged:

	November 1.	December 1.
Old rubber boots and shoes—domestic..	9¼@ 9¼	9¼@ 9¼
Old rubber boots and shoes—foreign...	9 @ 9¼	9¼@ 9¼
Pneumatic bicycle tires.....	4¼@ 4¾	4¼@ 4¾
Automobile tires	8¼@ 8¾	8¼@ 8¾
Solid rubber wagon and carriage tires...	9¼@ 9¾	9¼@ 9¾
White trimmed rubber.....	11 @11½	11 @11½
Heavy black rubber.....	4¾@ 5	4¾@ 5
Air brake hose	4½@ 4¾	4½@ 4¾
Garden hose	1¼@ 1¾	1¼@ 1¾
Fire and large hose.....	2 @ 2¼	2 @ 2¼
Matting	¾@ 1	¾@ 1

IMPORTS FROM PARA AT NEW YORK.

The Figures Indicate Weight in Pounds.

NOVEMBER 3.—By the steamer *Stephen*, from Manáos and Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
Poel & Arnold.....	304,800	42,400	148,300	56,100	551,600
A. T. Morse & Co.....	156,100	17,600	106,500	.....	280,200
New York Commercial Co.....	119,500	28,200	23,800	700	172,200
General Rubber Co.....	76,200	16,800	15,300	1,400	109,700
De Lagotellerie & Co.....	44,600	3,200	2,600	.....	50,400
Hagemeyer & Brunn.....	28,200	1,100	5,300	.....	34,600
G. Amsinck & Co.....	10,000	.....	9,900	.....	19,900

Total 739,400 109,300 311,700 58,200=1,218,600

NOVEMBER 15.—By the steamer *Dunstan*, from Manáos and Pará:

Poel & Arnold.....	435,400	56,000	98,900	31,100	621,400
New York Commercial Co.....	188,600	53,600	72,600	9,500	324,300
A. T. Morse & Co.....	85,800	8,200	78,500	21,600	194,100
General Rubber Co.....	77,300	17,800	16,400	4,300	115,800
De Lagotellerie & Co.....	56,400	5,000	4,600	.....	66,000
Hagemeyer & Brunn.....	28,200	2,200	13,200	.....	43,600

Total 871,700 142,800 284,200 66,500=1,365,200

NOVEMBER 20.—By the steamer *Sao Paulo*, from Pará:

Poel & Arnold.....	87,000	7,900	67,700	8,600	171,200
A. T. Morse & Co.....	49,600	4,600	33,700	.....	87,900
Hagemeyer & Brunn.....	20,000	1,100	5,300	.....	26,400
General Rubber Co.....	.....	.....	.....	10,500	10,500
De Lagotellerie & Co.....	.....	.....	6,600	.....	6,600
New York Commercial Co.....	.....	.....	4,000	.....	4,000

Total 156,600 13,600 117,300 19,100= 306,600

NOVEMBER 20.—By the steamer *Acre*, from Manáos and Pará:

Poel & Arnold.....	102,000	16,900	135,300	3,800	258,000
A. T. Morse & Co.....	94,100	16,100	37,700	300	148,200
New York Commercial Co.....	19,300	13,600	3,900	1,000	37,800
General Rubber Co.....	.....	.....	8,100	200	8,300
Hagemeyer & Brunn.....	6,400	.....	600	.....	7,000

Total 221,800 46,600 185,600 5,300 459,300

NOVEMBER 25.—By the steamer *Javary*, from Manáos:

New York Commercial Co.....	168,800	5,000	22,400	600	196,800
Poel & Arnold.....	28,900	21,800	.....	.....	50,700
H. A. Astlett.....	4,200	2,500	1,300	700	8,700

Total 201,900 29,300 23,700 1,300= 256,200

PARA RUBBER VIA EUROPE.

POUNDS.

OCTOBER 26.—By the *Mauretania*=Liverpool:

N. Y. Commercial Co. (Fine).....	11,500
Raw Products Co. (Coarse).....	11,000
General Rubber Co. (Coarse).....	11,500
Robinson & Co. (Coarse).....	6,500
A. T. Morse & Co. (Caucho).....	2,500 43,000

OCTOBER 30.—By the *Colon*=Mollendo:

W. R. Grace & Co. (Fine).....	11,000
W. R. Grace & Co. (Caucho).....	22,500 33,500

NOVEMBER 3.—By the *Lusitania*=Liverpool:

Raw Products Co. (Fine).....	33,500
Poel & Arnold (Fine).....	5,500
In Transit (Fine).....	22,500
Poel & Arnold (Caucho).....	45,000 106,500

NOVEMBER 4.—By the *Cedric*=Liverpool:

Robinson & Co. (Fine).....	11,500
Henderson & Korn (Fine).....	7,000 18,500

NOVEMBER 8.—By the *Trent*=Mollendo:

A. T. Morse & Co. (Fine).....	13,000
N. Y. Commercial Co. (Fine).....	7,000 20,000

NOVEMBER 10.—By the *President Grant*=Hamburg:

A. T. Morse & Co. (Fine).....	5,500
A. T. Morse & Co. (Caucho).....	4,500
Henderson & Korn (Caucho).....	2,000 12,000

NOVEMBER 13.—By the *Coronia*=Liverpool:

Poel & Arnold (Coarse).....	11,500
General Rubber Co. (Coarse).....	13,500
Raw Products Co. (Coarse).....	9,000
Muller Schall & Co. (Coarse).....	9,000
Poel & Arnold (Caucho).....	11,500 54,500

NOVEMBER 17.—By the *Mauretania*=Liverpool:

Raw Products Co. (Coarse).....	11,000
Henry A. Gould Co. (Fine).....	5,500
A. W. Brunn (Fine).....	4,500
In Transit (Fine).....	7,000 28,000

NOVEMBER 23.—By the *Oruba*=Mollendo:

W. R. Grace & Co. (Fine).....	3,500
W. R. Grace & Co. (Caucho).....	15,000 18,500

OTHER NEW YORK ARRIVALS.

CENTRALS.

[*This sign, in connection with imports of Centrals, denotes Guayaile rubber.]

POUNDS.

OCTOBER 28.—By the *Morro Castle*=Frontera:

Lawrence Import Co.	2,000
W. Loazia & Co., of N. Y.	2,000
H. Marquardt & Co.	1,500
Maitland, Coppell & Co.	1,000
Harburger & Stack.	1,000 7,500

OCTOBER 20.—By the *Santiago*=Tampico:

New York Commercial Co.....	*75,000
E. Maurer	*20,000
For Europe	*80,000 *175,000

OCTOBER 30.—By the *Colon*=Colon:

G. Amsinck & Co.....	11,000
----------------------	--------

American Trading Co..... 5,000

A. T. Morse & Co..... 5,000

Piza, Nephews & Co..... 3,500

General Exp. Comm. Co..... 2,500

Isaac Brandon & Bros..... 2,000 29,000

OCTOBER 31.—By the *Antilles*=New Orleans:

Eggers & Heinlein 3,500

Robinson & Co..... 3,000

G. Amsinck & Co..... 2,000

A. T. Morse & Co..... 2,000

Wessels, Kulenkampf & Co..... 1,500 12,000

OCTOBER 31.—By the *El Mundo*=Galveston:

Continental-Mexican Rubber Co. *150,000

Charles T. Wilson..... *45,000 *195,000

NOVEMBER 1.—By the *Allemania*=Colombia:

A. Angela & Co..... 12,000

G. Amsinck & Co..... 3,500

Schutte Bunemann & Co..... 1,000 16,500

NOVEMBER 3.—By the *Lusitania*=Liverpool:

New York Commercial Co..... *11,000

NOVEMBER 4.—By the *Carolina*=Havre:

Michelin Tire Co..... 13,500

NOVEMBER 4.—By the *El Cid*=Galveston:

Continental-Mexican Rubber Co..... *77,000

NOVEMBER 4.—By the *Cedric*=Liverpool:

C. P. dos Santos..... 11,500

NOVEMBER 6.—By the *Matanzas*=Tampico:

Ed Maurer *100,000

Maitland, Coppell & Co..... *34,000

For Europe *44,000 *178,000

NOVEMBER 6.—By the *Monterey*=Vera Cruz:

E. Nelson Tibbals & Co..... 6,000

American Trading Co..... 2,500

Harburger & Stack..... 2,500

Herman Klugg 2,500

E. Steiger & Co..... 1,500

H. Marquardt & Co 1,000 16,000

NOVEMBER 6.—By the *Prinz Eitel Friedrich*=Colombia:

Maitland, Coppell & Co..... 5,500

Mecke & Co..... 5,500

R. Del Castillo & Co..... 1,000 12,000

NOVEMBER 8.—By the *Advance*=Colon:

G. Amsinck & Co..... 18,000

Isaac Brandon & Bros..... 8,500

E. Nelson Tibbals & Co..... 5,500

Dumarest Bros. & Co..... 3,000

Pablo, Calvert & Co..... 2,000

Lanman & Kemp 1,500

Roldau & Van Sickle 1,000 39,500

NOVEMBER 8.—By the *El Oriente*=Galveston:

Continental-Mexican Rubber Co..... *150,000

NOVEMBER 8.—By the *Trent*=Colombia:

A. M. Capen's Sons..... 7,000

J. Sambrada & Co..... 1,500

H. C. Coleman 1,000

G. Amsinck & Co..... 1,000 10,500

NOVEMBER 13.—By the *Mexico*=Frontera:

A. T. Morse & Co..... 5,000

Harburger & Stack..... 3,000

E. Nelson Tibbals & Co..... 2,500

American Trading Co..... 1,500 12,000

NOVEMBER 13.—By the *Panama*=Colon:

Isaac Brandon & Bros..... 14,000

Laurence Johnson & Co..... 4,500

E. Nelson Tibbals & Co..... 4,000

G. Amsinck & Co..... 3,000

Andean Trading Co..... 3,000 28,500

NOVEMBER 14.—By the *Albion*=Colombia:

A. Angela & Co..... 13,000

Maitland, Coppell & Co..... 5,000

Caballero & Blanco..... 2,500

Iglesias, Lobo & Co..... 1,000

R. Del Castillo & Co..... 1,000 22,500

NOVEMBER 14.—By the *El Sol*=Galveston:

Continental-Mexican Rubber Co. *89,000

Charles T. Wilson..... *7,000 *96,000

NOVEMBER 14.—By the *Momus*=New Orleans:

Manhattan Rubber Mfg. Co..... 9,000

Robinson & Co..... 3,500

G. Amsinck & Co..... 3,500

Eggers & Heinlein..... 2,500

Wessels, Kulenkampf & Co..... 2,000

A. T. Morse & Co..... 2,000 22,500

NOVEMBER 17.—By the *Alliance*=Colon:

G. Amsinck & Co..... 11,500

Dumarest Bros. & Co..... 2,000

Silva, Bussenius & Co..... 1,500

Maitland, Coppell & Co..... 1,000 16,000

NOVEMBER 18.—By the *El Valle*=Galveston:

Continental-Mexican Rubber Co..... *80,000

NOVEMBER 18.—By the *Camaguey*=Tampico:

New York Commercial Co..... *170,000

Ed Maurer *50,000

Poel & Arnold *22,500

For Hamburg *50,000 292,500

NOVEMBER 21.—By the *El Mundo*=Galveston:

Continental-Mexican Rubber Co. *45,000

Charles T. Wilson..... *9,000 *54,000

NOVEMBER 22.—By the *Oruba*=Colombia:

A. M. Capen's Sons..... 11,500

G. Amsinck & Co..... 11,500

Mecke & Co..... 3,500

J. Sambrada & Co..... 2,500

Delima, Cortisoz & Co..... 1,500

Roldau & Van Sickle..... 1,000

Meyer Hecht 1,000 32,500

NOVEMBER 23.—By the *Antilles*=Tampico:

New York Commercial Co..... *175,000

Ed Maurer *150,000

Continental-Mexican Rubber Co. *125,000

Poel & Arnold..... *22,500

For Europe *80,000 *452,500

AFRICAN.

OCTOBER 26.—By the *Mauretania*=Liverpool:

General Rubber Co..... 11,500

Wallace L. Gough..... 13,000

Poel & Arnold..... 11,000

Ed Maurer 9,000

Robinson & Co..... 5,500 50,000

OCTOBER 28.—By the *Kaiserin Auguste Victoria*=Hamburg:

A. T. Morse & Co..... 45,000

George A. Alden & Co..... 9,000

Robert Badenhop 9,000

Ed Maurer 5,000

Poel & Arnold..... 3,000

Raw Products Co..... 2,000 73,000

RUBBER FLUX

No. 17. Particularly adapted to softening material for tubing machine. Almost universally used for waterproofing wire.

No. 48. For fluxing pigments in compounding. A valuable adjunct to the manufacture of moulded goods as it DOES NOT BLOW UNDER CURE.

WRITE FOR PRICES.

Massachusetts Chemical Co., Walpole, Mass.

SOLE FACTORY:
WALPOLE RUBBER WORKS
WALPOLE VARNISH WORKS
ELECTRIC INSULATION LABORATORY

THEODORE HOFELLER & CO.



Old Rubber



206-226 SCOTT ST.

BUFFALO, N. Y.

"PROWODNIK" Russian Reclaimed

Contains more real rubber than any other reclaimed shoe on the market

Chemical analysis: Rubber, 43%; Sulphur (free), nil

WHAT OTHER BRAND WILL TEST AS HIGH?

Write for free samples

W. C. COLEMAN CO., BOSTON, MASS., U. S. A.

Sole concessions for U. S. and Canada

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BOSTON YARN CO.

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MOTOR TIRE FABRICS

"Lowell Weaving Co."

"Passaic Cotton Mills"

Yarns for every purpose
Sheetings

Mechanical Ducks
Osnaburgs

Auto Top Ducks
Specialties in Weaving

1912
**THIRD INTERNATIONAL RUBBER AND ALLIED TRADES
EXPOSITION**

to be held at

NEW GRAND CENTRAL PALACE

46th and 47th Streets and Lexington Avenue

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September 23rd to October 3rd, Inclusive

OBJECTS:

MANUFACTURING PROGRESS.—To show the great progress that has been made in the manufacture of rubber goods of every description, machinery, mechanical devices, chemistry as applied to manufacture, and to exploit indigenous and plantation rubber from all countries. To bring the producer into closer touch with the manufacturer and chemist, etc., to enable them to exchange ideas regarding the rubber required for the American market.

KINDRED TRADES.—The display of all description of goods that come under the allied trades used in producing, manufacturing, etc. All appliances required by planters, etc.

SELLERS & EXPORTERS will be brought into direct touch with manufacturers and will see at a glance the goods that are required by the consumer in America or abroad.

SELLING EXHIBITS.—No retail selling stands or what are called "fakir" exhibits will be accepted upon any consideration.

CONFERENCES of manufacturers, planters, chemists, etc., will also be held.

SPACE.—Particulars with plans will be supplied. Price will include covered platform.

CUSTOMS.—All exhibits admitted duty free.

INTERNATIONAL EXPOSITION COMPANY, Inc., N. Y.

A. STAINES MANDERS, Organizing Manager

MISS D. FULTON, Secretary

75 Chancery Lane (Holborn), London, W. C., England

New York: 46th and 47th Streets and Lexington Ave.

OCTOBER 31.—By the *Zeeland*=Antwerp:
Poel & Arnold 6,500

NOVEMBER 3.—By the *Lusitania*=Liverpool:
Muller, Schall & Co. 5,500
Wallace L. Gough Co. 5,500
George A. Alden & Co. 2,500
Ed Maurer 2,000 15,500

NOVEMBER 4.—By the *Cedric*=Liverpool:
James T. Johnstone 9,000
Ed Maurer 2,500 11,500

NOVEMBER 8.—By the *Kroonland*=Antwerp:
George A. Alden & Co. 45,000
Poel & Arnold 25,000
Wallace L. Gough Co. 22,500
Raw Products Co. 11,500
General Rubber Co. 13,500
Rubber Trading Co. 15,000
Muller, Schall & Co. 13,500 146,000

NOVEMBER 8.—By the *President Grant*=Hamburg:
Poel & Arnold 60,000
A. T. Morse & Co. 30,000
Wallace L. Gough Co. 35,000
General Rubber Co. 17,000
Rubber Trading Co. 10,000
Henderson & Korn 8,000
Robert Badenhop 7,000 167,000

NOVEMBER 13.—By the *Caronia*=Liverpool:
Poel & Arnold 22,500
Muller, Schall & Co. 11,000
Raw Products Co. 3,500 37,000

NOVEMBER 13.—By the *Baltic*=Liverpool:
James T. Johnstone 4,500
A. W. Brunn 4,500 9,000

NOVEMBER 13.—By the *Lapland*=Antwerp:
General Rubber Co. 70,000
Wallace L. Gough Co. 11,000
In Transit 11,500
Rubber Trading Co. 8,000 100,500

NOVEMBER 16.—By the *St. Paul*=London:
Poel & Arnold 15,500
A. T. Morse & Co. 3,000 18,500

NOVEMBER 17.—By the *Mauretania*=Liverpool:
George A. Alden & Co. 18,000
General Rubber Co. 11,000 29,000

NOVEMBER 20.—By the *Celtic*=Liverpool:
James T. Johnstone 11,500

NOVEMBER 20.—By the *Rochambeau*=Havre:
A. T. Morse & Co. 17,500
Poel & Arnold 3,500
In Transit 17,000 38,000

NOVEMBER 23.—By the *Vaderland*=Antwerp:
A. T. Morse & Co. 11,000
Raw Products Co. 2,500 13,500

EAST INDIAN.

[*Denotes Plantation Rubber.]

OCTOBER 27.—By the *Adriatic*=London:
Ed Maurer *37,000

OCTOBER 28.—By the *Kyblefs*=Colombo:
A. T. Morse & Co. *31,000
New York Commercial Co. *16,000
Muller, Schall & Co. *4,500 *51,500

OCTOBER 30.—By the *St. Louis*=London:
Poel & Arnold *22,500
New York Commercial Co. *9,000 31,500

OCTOBER 31.—By the *Zeeland*=Antwerp:
A. T. Morse & Co. *25,000

OCTOBER 31.—By the *Minnetonka*=London:
Poel & Arnold *17,000
A. T. Morse & Co. *13,500 *30,500

NOVEMBER 1.—By the *Oceanic*=London:
A. T. Morse & Co. *13,000
New York Commercial Co. *11,000
Poel & Arnold *4,500 *28,500

NOVEMBER 3.—By the *Lusitania*=Liverpool:
Ed Maurer *17,000

NOVEMBER 4.—By the *Cedric*=Liverpool:
Ed Maurer *9,000

NOVEMBER 6.—By the *Kasanga*=Colombo:
New York Commercial Co. *55,000
A. T. Morse & Co. *22,500 *77,500

NOVEMBER 8.—By the *Kroonland*=Antwerp:
A. T. Morse & Co. *56,000
Ed Maurer *11,500
Robert Badenhop *2,500 *70,000

NOVEMBER 8.—By the *Minnehaha*=London:
A. T. Morse & Co. *34,000
Henderson & Korn *33,500
General Rubber Co. *33,000
Ed Maurer *11,500
Poel & Arnold *11,000
James T. Johnstone *7,000
New York Commercial Co. *5,500
Rubber Trading Co. *2,500
Raw Products Co. *3,500
In Transit *20,000 *161,500

NOVEMBER 9.—By the *Adamstrum*=Colombo:
A. T. Morse & Co. *50,000
New York Commercial Co. *7,000 *57,000

NOVEMBER 10.—By the *New York*=London:
Poel & Arnold *25,000
New York Commercial Co. *11,000
Henderson & Korn *2,000 *38,000

NOVEMBER 10.—By the *President Grant*=Hamburg:
Robert Badenhop *11,000

NOVEMBER 13.—By the *Caronia*=Liverpool:
Ed Maurer *30,000
Raw Products Co. *3,500 *33,500

NOVEMBER 13.—By the *Lapland*=Antwerp:
A. T. Morse & Co. *15,000
Robert Badenhop *11,000
In Transit *11,500 *37,500

NOVEMBER 15.—By the *Minnewaska*=London:
Poel & Arnold *28,000
General Rubber Co. *22,500
A. T. Morse & Co. *13,500
Henderson & Korn *11,000
Robinson & Co. *11,000 86,000

NOVEMBER 16.—By the *St. Paul*=London:
New York Commercial Co. *33,500
James T. Johnstone *7,000 *40,500

NOVEMBER 16.—By the *Katuna*=Singapore:
Ed Maurer *30,000
L. Littlejohn & Co. *25,000
Haebler & Co. *11,500
New York Commercial Co. *5,500
A. W. Brunn *11,000
Haebler & Co. 11,500
Poel & Arnold 11,000
Wallace L. Gough Co. 11,500
Manhattan Rubber Mfg. Co. 7,000 129,000

NOVEMBER 17.—By the *Mauretania*=Liverpool:
Ed Maurer *13,500
William H. Stiles *9,000 *22,500

NOVEMBER 20.—By the *Philadelphia*=London:
Poel & Arnold *56,000
A. T. Morse & Co. *11,000
William H. Stiles *4,500
In Transit *45,000 *116,500

NOVEMBER 22.—By the *Vaderland*=Antwerp:
A. T. Morse & Co. *38,000

NOVEMBER 22.—By the *Oceanic*=London:
Poel & Arnold *34,000
A. T. Morse & Co. *15,500
William H. Stiles *11,000
Ed Maurer *11,500
New York Commercial Co. *5,500 *77,500

NOVEMBER 23.—By the *Mesaba*=London:
Ed Maurer *11,500
Robinson & Co. *5,500
James T. Johnstone *3,500
General Rubber Co. *7,000
Charles T. Wilson 15,500 43,000

GUTTA-JELUTONG.

POUNDS.

NOVEMBER 16.—By the *Katuna*=Singapore:
L. Littlejohn & Co. 350,000
Haebler & Co. 225,000
Wallace L. Gough Co. 150,000
George A. Alden & Co. 55,000 780,000

GUTTA-PERCHA.

NOVEMBER 3.—By the *President Lincoln*=Hamburg:
Robert Soltau & Co. 8,000

NOVEMBER 10.—By the *President Grant*=Hamburg:
Robert Soltau & Co. 13,500

NOVEMBER 16.—By the *Katuna*=Singapore:
Haebler & Co. 45,000
L. Littlejohn & Co. 45,000
Poel & Arnold 5,000 95,000

BALATA.

OCTOBER 31.—By the *Saramacca*=Demerara:
Ed Maurer 18,000
Middleton & Co. 15,000
Iglesias Lobo & Co. 9,000
Bartling & De Leon 1,500 43,500

NOVEMBER 8.—By the *Marowijne*=Trinidad:
Iglesias Lobo & Co. 45,000
G. Amsinck & Co. 22,000
Schluttte Bunemann & Co. 7,000 74,000

NOVEMBER 13.—By the *Navarre*=Trinidad:
American Trading Co. 22,500
Iglesias Lobo & Co. 9,000
Ed Maurer 11,000
J. P. Watson Co. 4,500
Frame & Co. 2,500 49,500

NOVEMBER 15.—By the *Minnewaska*=London:
Earle Brothers 13,500

NOVEMBER 23.—By the *Grenada*=Trinidad:
G. Amsinck & Co. 15,000

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—OCTOBER.

Imports:	Pounds.	Value.
India-rubber	9,066,090	\$8,109,011
Balata	221,638	146,515
Guayule	596,121	361,351
Gutta-percha	157,755	20,449
Gutta-jelutong (Pontianak)	2,716,522	125,333
Total	12,758,126	\$8,762,659

Exports:	Pounds.	Value.
India-rubber	200,196	\$162,647
Balata .....	.....	.....
Guayule	6,877	3,177
Gutta-percha .....	.....	.....
Reclaimed rubber	185,311	22,672
Rubber scrap, imported....	902,587	\$74,002
Rubber scrap, exported....	373,923	47,372

BOSTON ARRIVALS.

OCTOBER 19.—By the *Jeseric*=Singapore:
Wallace L. Gough Co. (Jelutong) 325,000
State Rubber Co. (Jelutong) ... 200,000
L. Littlejohn & Co. (Jelutong) ... 155,000 680,000

OCTOBER 20.—By the *Aughan*=London:
Poel & Arnold (African) 4,500

OCTOBER 25.—By the *Indradeo*=Singapore:
State Rubber Co. (Jelutong) 240,000

OCTOBER 28.—By the *Indrawadi*=Singapore:
Haebler & Co. (Gutta-percha) 30,000

PARA IMPORTS OF INDIA RUBBER, SEPTEMBER, 1911 (IN KILOGRAMS).

NEW YORK.					EUROPE.					TOTAL.	
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	TOTAL.
Grunder & Co.	166,024	39,711	163,182	396	369,313	95,269	3,748	6,105	20,119	125,241	494,554
Ad. H. Alden, Limited.	78,225	15,067	80,564	7,667	182,223	81,442	15,815	49,638	8,250	155,145	337,368
Suarez Hermanos & Co., Limited. ....	.....	.....	.....	.....	.....	69,091	1,694	20,856	56,945	148,586	148,586
Gordon & Co.	61,032	8,216	45,140	.....	114,388	18,454	3,903	1,186	716	24,259	138,647
R. O. Ahlers & Co.	28,874	.....	2,290	21,405	52,569	2,395	.....	176	3,552	6,123	58,692
Pires, Teixeira & Co.	16,660	1,870	11,220	.....	29,750	15,130	.....	5,940	.....	21,070	50,820
De Lagotellerie & Co.	29,750	4,420	14,190	.....	48,360	.....	.....	.....	.....	11,980	40,590
Nunes Sobrinho & Co.	22,780	1,870	3,960	.....	28,610	8,670	.....	2,970	.....	.....	990
Sundries .....	.....	.....	990	.....	990	.....	.....	.....	.....	.....	.....
Itacatiara, direct .....	.....	.....	.....	.....	.....	6,540	1,120	4,440	142	12,242	12,242
Manaos, direct	507,032	103,434	74,896	5,736	691,098	335,428	56,754	43,298	70,665	506,145	1,197,243
Iquitos, direct	16,088	538	907	12,445	29,978	.....	.....	.....	.....	.....	29,978
Total, September, 1911.	927,165	175,126	397,339	47,649	1,547,279	632,419	83,374	134,609	160,389	1,010,791	2,558,070
Total, August, 1911.	419,044	110,293	376,797	115,523	1,021,857	638,349	65,625	162,053	322,223	1,188,250	2,210,107
Total, July, 1911.	294,212	62,865	347,130	214,267	918,474	599,843	96,127	103,983	335,317	1,135,270	2,053,744



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MARKED ACTIVITY IN BALTIMORE RUBBER.

James Gilbert, of Whitelock street, Baltimore, Maryland, took great pleasure and felt a most justifiable pride in a rubber plant which adorned the front of his house standing eight feet high, and with its containing box weighed 175 pounds. A few nights ago it quietly but completely disappeared. The police of Baltimore are busy on the problem. In Mr. Gilbert's opinion it required at least three men to move his rubber plant. The marked decline in the market quotations of fine Pará, which does not seem able to get very far above the dollar mark, does not appear to have been followed by any decrease in the popularity of the domestic and decorative variety of rubber trees. People who have handsome eight foot plants, thrifty and glossy, standing on the front porch, would do well to chain them to the posts

Antwerp.

RUBBER STATISTICS FOR OCTOBER.

DETAILS.	1911.	1910.	1909.	1908.	1907.
Stocks, Sept. 30. kilos	435,545	580,908	397,454	654,161	719,005
Arrivals in October..	415,263	275,753	265,185	554,756	237,963
Congo sorts.....	355,970	175,101	199,664	487,104	180,366
Other sorts.....	59,293	100,652	65,521	67,652	57,597
Aggregating	850,808	856,661	662,639	1,208,917	956,968
Sales in October.....	272,600	257,887	197,808	546,813	233,152
Stocks, October 31...	578,208	597,774	464,831	662,104	723,816
Arrivals since Jan. 1.	3,601,890	3,305,148	3,836,338	4,217,919	4,302,317
Congo sorts.....	2,706,051	2,525,799	2,858,957	3,583,058	3,656,700
Other sorts.....	895,839	779,349	977,381	634,861	645,617
Sales since Jan. 1....	3,611,994	3,247,884	3,967,242	4,562,709	4,236,685

RUBBER ARRIVALS FROM THE CONGO.

OCTOBER 4, 1911.—By the steamer *Elizabethville*:

Bunge & Co.....	(Société Générale Africaine) kilos	60,000
Do	(Chemins de fer Grands Lacs)	7,400
Do	(Comité Spécial Katanga)	100
Do	(Comptoir Commercial Congolais)	6,300
Do	(Alberta)	650
Do	(Société Forestière & Minière)	42,200
Do	(Cie. du Kasai)	2,100
Société Coloniale Anversoise.....	(Belge du Haut Congo)	2,100
Do	(Cie. du Lomoni)	1,600
Do		5,400
L. & W. Van de Velde,	(Société Comm. and Financ. Africaine)	12,000
Charles Dethier.....	(Société Comm. & Minière)	1,600
Willart Freres		1,200
Comptoir d'Irebu		400
		141,640

October 25.—By the steamer *Leopoldville*:

Bunge & Co.....	(Société Générale Africaine) kilos	90,000
Do	(Chemins de fer Grands Lacs)	9,500
Do	(Société Comm. and Financ. Africaine)	300
Do	(Equatoriale Congolaise)	1,100
Do	(Comptoir Commercial Congolais)	11,000
Société Coloniale Anversoise.....	(Belge de Haut Congo)	600
Do	(Cie. du Kasai)	82,800
Do		6,300
L. & W. Van de Velde	(Société Comm. and Financ. Africaine)	22,000
Do		4,000
Charles Dethier	(American Congo Co.)	4,000
		231,600

THE TWELFTH NATIONAL AUTOMOBILE SHOW.

At the Twelfth National Automobile Show, to be held in Madison Square Garden, New York, for two weeks, beginning with January 7, 1912, the following manufacturers of tires and other rubber goods will have exhibits:

Ajax-Grieb Rubber Co., New York.
 The Batavia Rubber Co., Batavia, New York.
 S. F. Bowser & Co., Fort Wayne, Indiana.
 Consolidated Rubber Tire Co., New York.
 Continental Caoutchouc Co., New York.
 The Diamond Rubber Co., Akron, Ohio.
 Joseph Dixon Crucible Co., Jersey City, New Jersey.
 Empire Tire Co., Trenton, New Jersey.
 Federal Rubber Manufacturing Co., Cudahy, Wisconsin.
 Firestone Tire and Rubber Co., Akron, Ohio.
 Fisk Rubber Co., Chicopee Falls, Massachusetts.
 G & J Tire Co., Indianapolis, Indiana.
 The B. F. Goodrich Co., Akron, Ohio.
 The Goodyear Tire and Rubber Co., Akron, Ohio.
 Hartford Rubber Works Co., Hartford, Connecticut.
 Hodgman Rubber Co., New York.
 J. Ellwood Lee Co., Conshohocken, Pennsylvania.
 Michelin Tire Co., Milltown, New Jersey.
 Morgan & Wright, Detroit, Michigan.
 The Motz Clincher Tire and Rubber Co., Akron, Ohio.
 The Pantasote Co., New York.
 Republic Rubber Co., Youngstown, Ohio.
 Seamless Rubber Co., New Haven, Connecticut.
 C. A. Shaler Co., Waupun, Wisconsin.
 The Stein Double Cushion Tire Co., Akron, Ohio.
 Swinchart Tire and Rubber Co., Akron, Ohio.
 United Rim Co., Akron, Ohio.
 Voorhees Rubber Manufacturing Co., Jersey City, New Jersey.

